MHC-7710D

SERVICE MANUAL

AEP Model
UK Model

- MHC-7710D is composed of following models. As for the service manual, it is issured for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR MHC-7710D

AMPLIFIER	TA-H7710D
CD PLAYER	CDP-H7700D
TUNER	ST-H7700D
CASSETTE DECK	TC-H7700D
SPEAKER SYSTEM	SS-H7710D

SPECIFICATIONS

Power requirements	AEP model: 220 V–230 V, 50/60 Hz UK model: 240 V, 50 Hz
Power consumption	AEP model: 150 watts UK model: 300 watts
Dimensions	Approx. 225 x 365 x 275 mm (w/h/d) ($8^7/_8$ x $14^3/_8$ x $10^7/_8$ inches) incl. projecting parts and controls
Weight	Approx. 11.7 kg (25 lb 12 oz)
Supplied accessories	Remote commander (1) (RM-S570) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM antenna (1) AC power cord (1) Flat cord (2) Optical cord (1)

Design and specifications subject to change without notice.

PARTS LIST

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS ******************************	
	1-501-369-11	ANTENNA	
	1-501-374-11	ANTENNA, LOOP	
⚠	1-558-032-11	CORD, POWER (UK)	
	1-574-264-11	CORD, LIGHT PLUG	
	1-574-927-21	CORD (WITH CONNECTOR) (TA-ST)	
⚠	1-575-131-11	CORD, POWER (AEP)	
	1-590-855-11	CORD, SPEAKER (SS)	
	1-590-870-11	CORD (WITH CONNECTOR) (TA-TC-CD)	
	1-693-086-11	REMOTE COMMANDER (RM-S570)	
*	3-378-785-01	CUSHION (FRONT) (TC)	
*	3-378-786-01	CUSHION (REAR) (TC)	
	3-754-881-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE, DUTCH)	
	3-754-881-41	MANUAL, INSTRUCTION (GERMAN, SWEDISH, ITALIAN, PORTUGUESE) (AEP)	
	3-755-326-11	MANUAL, INSTRUCTION (SS)	
*	4-026-824-01	SHEET PROTECTION (SS)	
	4-910-323-01	SHEET PROTECTION (TC)	
	4-920-941-01	SHEET (B), PROTECTION (CDP)	
*	4-945-075-01	CUSHION (RIGHT) (TA)	
*	4-945-076-01	CUSHION (LEFT) (TA)	
*	4-857-137-01	CUSHION (SS)	
*	4-951-877-01	CUSHION (ST)	
*	4-953-543-01	INDIVIDUAL CARTON (CDP, ST, TA, TC)	
*	4-953-544-01	INDIVIDUAL CARTON (CDP, TA, TC) (AEP)	
*	4-953-545-01	INDIVIDUAL CARTON (SS)	

MINI Hi-Fi COMPONENT SYSTEM

SONY®

English
92F0459-1
Printed in Japan
© 1992. 6

9-957-264-11

Sony Corporation
Audio Group

Published by Customer Relations and Service Group

TC-H7700D

SERVICE MANUAL

AEP Model
UK Model

This set is the cassette deck
section in MHC-7700D/7710D

- TC-H7700D is similar to the earlier TC-H5600 (AEP, UK model).
- Refer to TC-H5600 service manual for information not contained in this service manual.

MICROFILM

STEREO CASSETTE DECK

SONY®

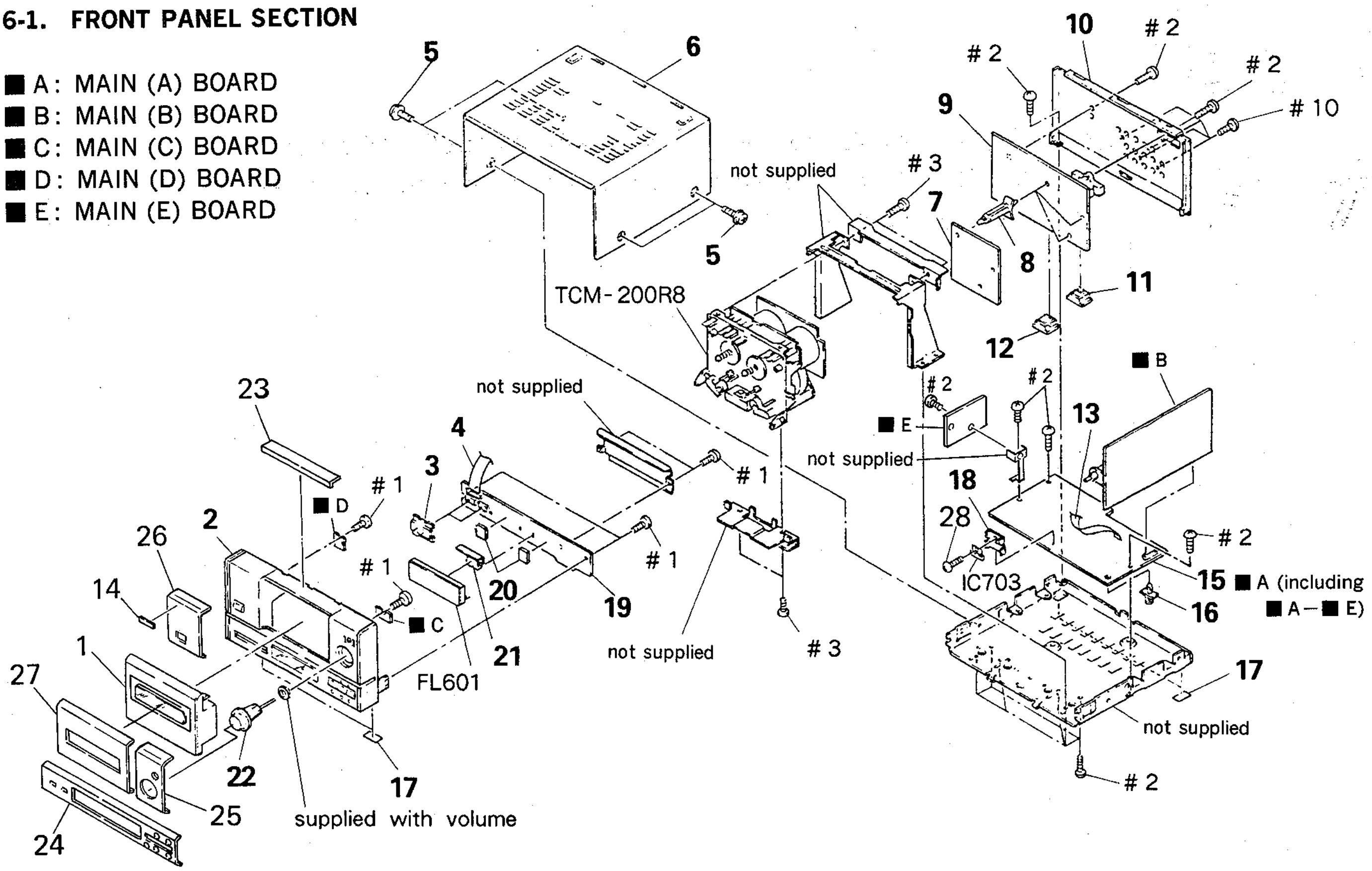
PAGE 41.

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ Parts Color ↑ Cabinet's Color

6-1. FRONT PANEL SECTION

■ A: MAIN (A) BOARD
■ B: MAIN (B) BOARD
■ C: MAIN (C) BOARD
■ D: MAIN (D) BOARD
■ E: MAIN (E) BOARD


5
6
10
# 2
# 2
# 2
9
# 10
not supplied
# 3
7
5
8
11
TCM-200R8
12
■ B
23
not supplied
4
# 2
# 2
13
■ E
not supplied
3
# 1
# 1
18
■ D
28
# 2
26
2
# 1
# 1
IC703
15 ■ A (including ■ A–■ E)
16
14
20
19
■ C
21
not supplied
# 3
1
FL601
17
27
not supplied
22
17
# 2
25
supplied with volume
24

Ref. No.	Part No.	Description	Remark
1	X-3365-295-1	LID ASSY, CASSETTE	
2	X-3365-293-1	PANEL ASSY, FRONT	
3	3-368-105-11	KNOB (SLIDE)	
4	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
5	3-363-099-11	SCREW (CASE +3X8 TP2)	
6	4-932-841-81	CASE	
* 7	1-639-415-11	POWER BOARD	
* 8	3-703-353-02	SUPPORT, PC BOARD	
* 9	A-2006-548-A	JACK BOARD, COMPLETE	
* 10	3-375-194-11	PANEL, BACK (AEP, UK)	
* 10	3-375-194-02	PANEL, BACK (Germany)	
* 11	1-573-188-11	CONNECTOR, BRIDGE 7P	
* 12	1-573-389-11	CONNECTOR, BRIDGE 8P	
13	1-575-903-11	WIRE. FLAT TYPE (15 CORE)	
14	4-942-636-11	EMBLEM (No. 3.5), SONY	
* 15	A-2006-452-A	MAIN BOARD, COMPLETE	
* 16	3-350-847-31	HOLDER, PCB	
17	4-930-336-21	FOOT (FELT)	
* 18	3-356-925-01	HEAT SINK	
* 19	A-2006-453-A	PANEL BOARD, COMPLETE	
* 20	4-921-941-01	CUSHION (FL)	
* 21	3-368-109-01	HOLDER, FL TUBE	
22	X-3365-294-1	KNOB (REC VOL) ASSY	
23	3-367-893-51	PLATE (TOP), ORNAMENTAL	
24	3-368-095-11	PLATE (PANEL), ORNAMENTAL	
25	3-368-097-11	PLATE (R), ORNAMENTAL	
26	3-368-096-11	PLATE (L), ORNAMENTAL	
27	3-368-098-11	PLATE (CASSETTE), ORNAMENTAL	
28	7-682-548-04	SCREW +BVTT 3X8 (S)	
FL601	1-519-656-11	INDICATOR TUBE, FLUORESCENT	
IC703	8-759-973-95	IC BA6219B	

English
92F0459-1
Printed in Japan
© 1992. 6

9-957-271-11

Sony Corporation
Audio Group

Published by Customer Relations and Service Group

TC-H5600

SERVICE MANUAL

AEP Model
UK Model
E Model

This unit is the cassette deck for the MHC-5600 component system.

Model Name Using Similar Mechanism	TC-WR97ES/WR870
Tape Transport Mechanism Type	TCM-200R8

SPECIFICATIONS

Recoding system	4-track 2-channel stereo
Frequency response	(DOLBY NR OFF) 30 – 14,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S) 30 – 15,000 Hz (±3 dB) using TYPE II cassette 30 – 16,000 Hz (±3 dB) using TYPE IV cassette
Wow and flutter	0.06% WRMS ±0.16% (DIN)
Inputs	PHONO (phono jacks): sensitivity 5 mV impedance 47 kohms VIDEO (phono jacks) sensitivity 300 mV impedance 47 kohms

Design and specifications subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

MICROFILM

STEREO CASSETTE DECK

SONY®

TABLE OF CONTENTS

Section Title Page

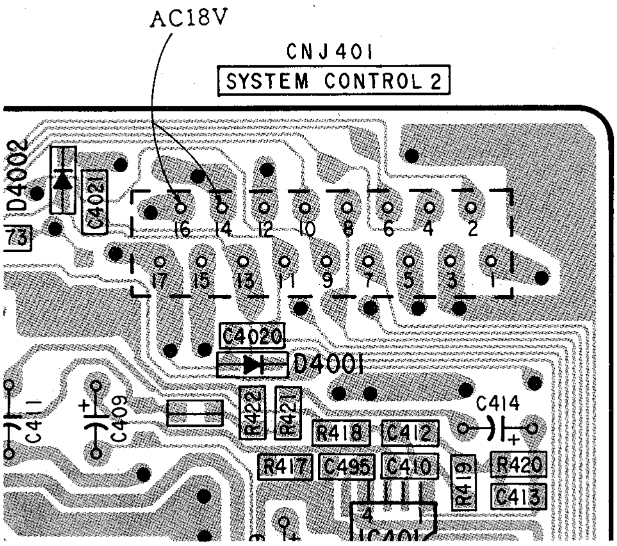
1. GENERAL ········· 3
2. DISASSEMBLY ········· 4
3. MECHANICAL ADJUSTMENTS ········· 7
4. ELECTRICAL ADJUSTMENTS ········· 7
5. DIAGRAMS
   - 5-1. IC Pin Description ········· 10
   - 5-2. Semiconductor Lead Layouts ········· 14
   - 5-3. Circuit Boards Location ········· 14
   - 5-4. Block Diagram ········· 15
   - 5-5. Printed Wiring Boards – Main Section – ········· 20
   - 5-6. Schematic Diagram – Main Section – ········· 23
   - 5-7. Schematic Diagram – Pin Jack Section – ········· 29
   - 5-8. Printed Wiring Boards – Pin Jack Section – ········· 33
   - 5-9. Printed Wiring Boards – Panel Section – ········· 37
   - 5-10. Schematic Diagram – Panel Section – ········· 39
6. EXPLODED VIEWS
   - 6-1. Front Panel Section-1 ········· 41
   - 6-2. Mechanism section-1 ········· 42
   - 6-3. Mechanism section-2 ········· 43
7. ELECTRICAL PARTS LIST ········· 44

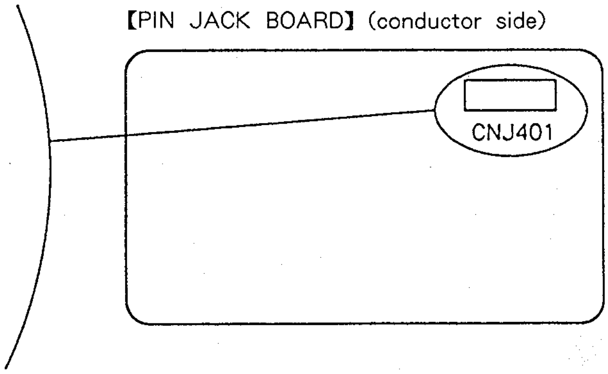
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Caution when repairing

Normally the power of this set is supplied from the TA-H5600 amplifier connected. When only this set is repaired, connect the power of 18V AC as shown in the figure below.

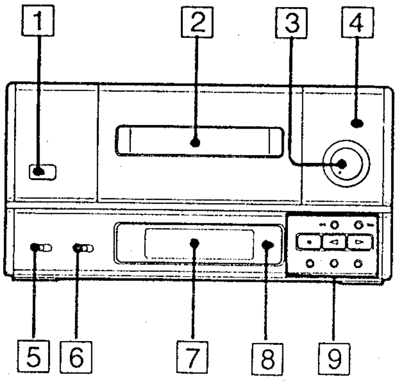

AC18V
CNJ401
SYSTEM CONTROL 2
D4002
C4021
16 14 12 10 8 6 4 2
17 15 13 11 9 7 5 3 1
C4020
D4001
C411
C409
R422
R421
R418
C412
C414
R417
C495
C410
R419
R420
C413
IC401


【PIN JACK BOARD】 (conductor side)
CNJ401

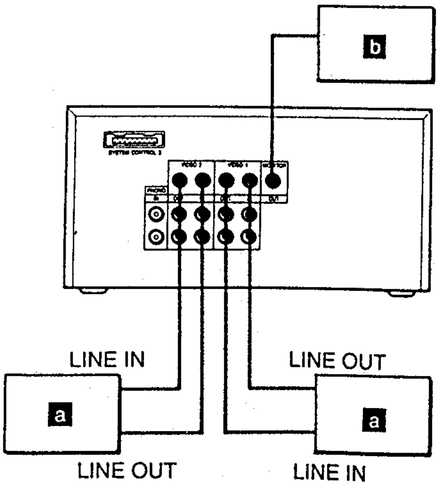
SECTION 1
GENERAL

This section is extracted from instruction manual.

LOCATION AND FUNCTION CONTROLS



1. ⏏ OPEN/CLOSE button
2. Cassette holder
3. REC LEVEL (recording level) control (92)
4. AUTO REC LEVEL (automatic recording level) button (96)
5. DOLBY NR (Dolby Noise Reduction) button (64)
6. DIRECTION MODE button (62)
7. Display window
8. COUNTER RESET button
   Resets the counter of the cassette deck to "0".
9. Tape operation buttons
   ◀◀ ▶▶ : Fast winding
   ■ : Stop
   ▷ : Forward play
   ◁ : Reverse play
   ❙❙ : PAUSE
   : MUTE (Muting)
   ● : REC (recording)



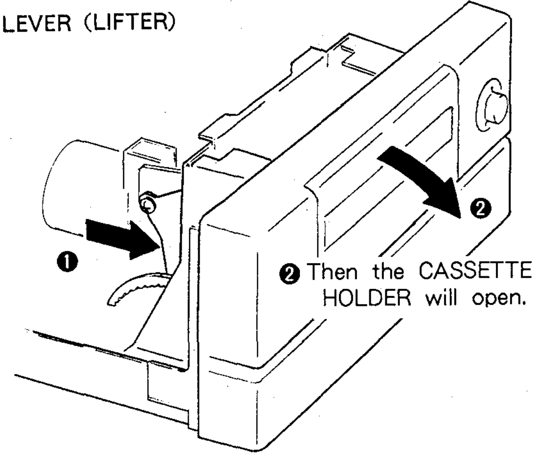
You can connect a VCR a to the VIDEO 1 or VIDEO 2 jacks. You can also connect a monitor TV b to MONITOR OUT. (TV with MONITOR IN jacks only.) To select VCR, press the VIDEO FUNCTION selector and light up the VIDEO 1 or VIDEO 2 indicator.

SECTION 2
DISASSEMBLY

NOTE : Follow the disassembly procedure in the numerical order given.

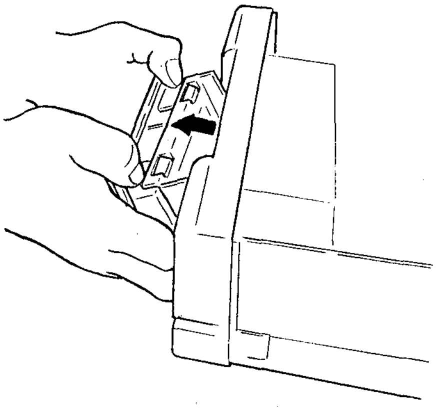
· FRONT PANEL

LEVER (LIFTER)

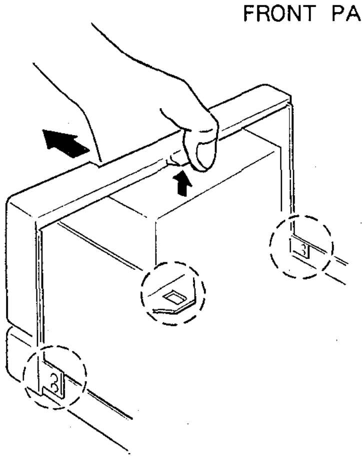

❷
❶
❷ Then the CASSETTE HOLDER will open.

❶ Push LEVER (LIFTER) in the direction of arrow ❶. (Refer to the item of CASSETTE HOLDER on page 5.)

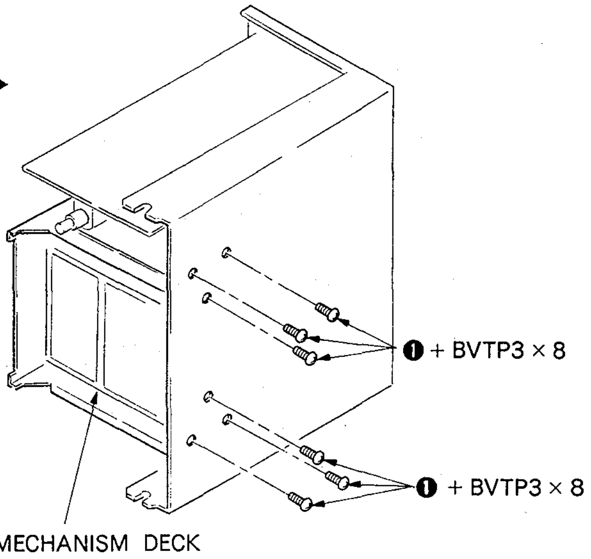
CASSETTE LID



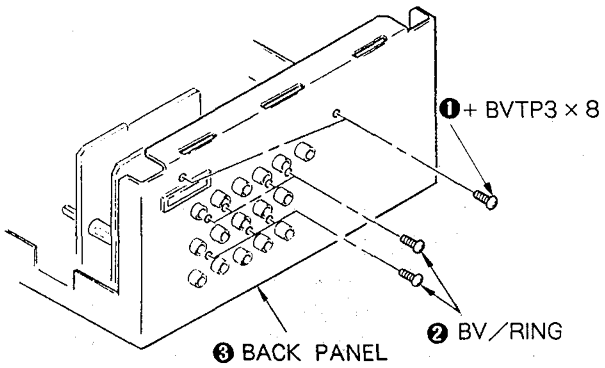
FRONT PANEL

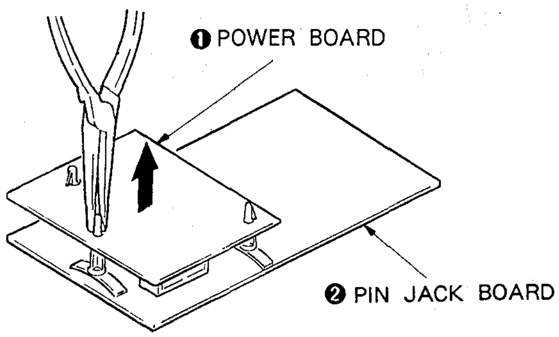


· MECHANISM DECK

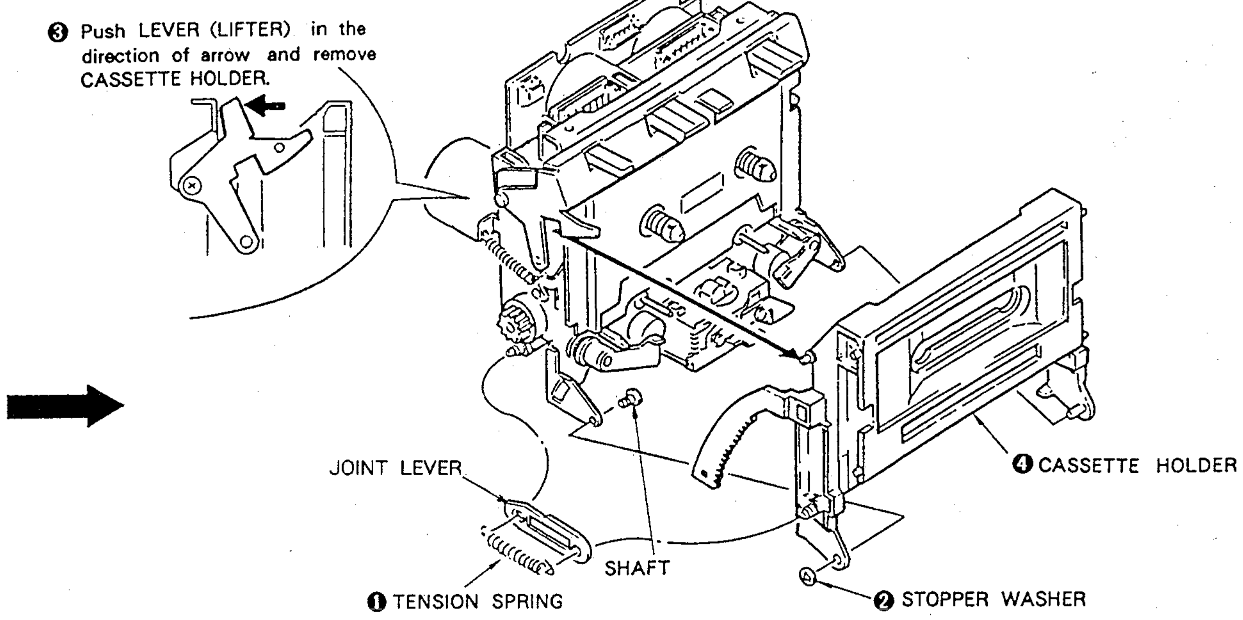

❶ + BVTP3 × 8
❶ + BVTP3 × 8
❷ MECHANISM DECK

· PIN JACK/POWER BOARD

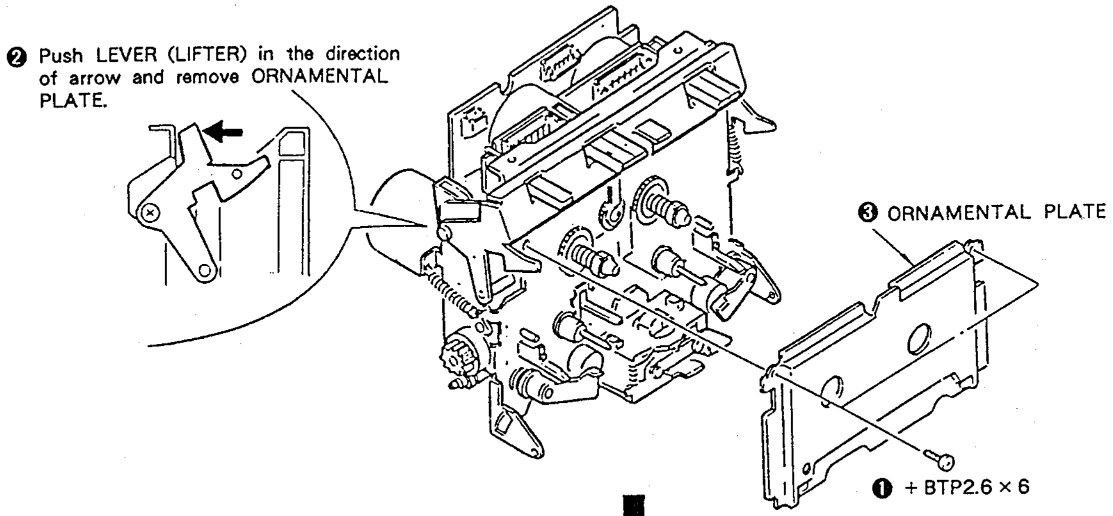

❶+ BVTP3 × 8
❷ BV/RING
❸ BACK PANEL


❶ POWER BOARD
❷ PIN JACK BOARD

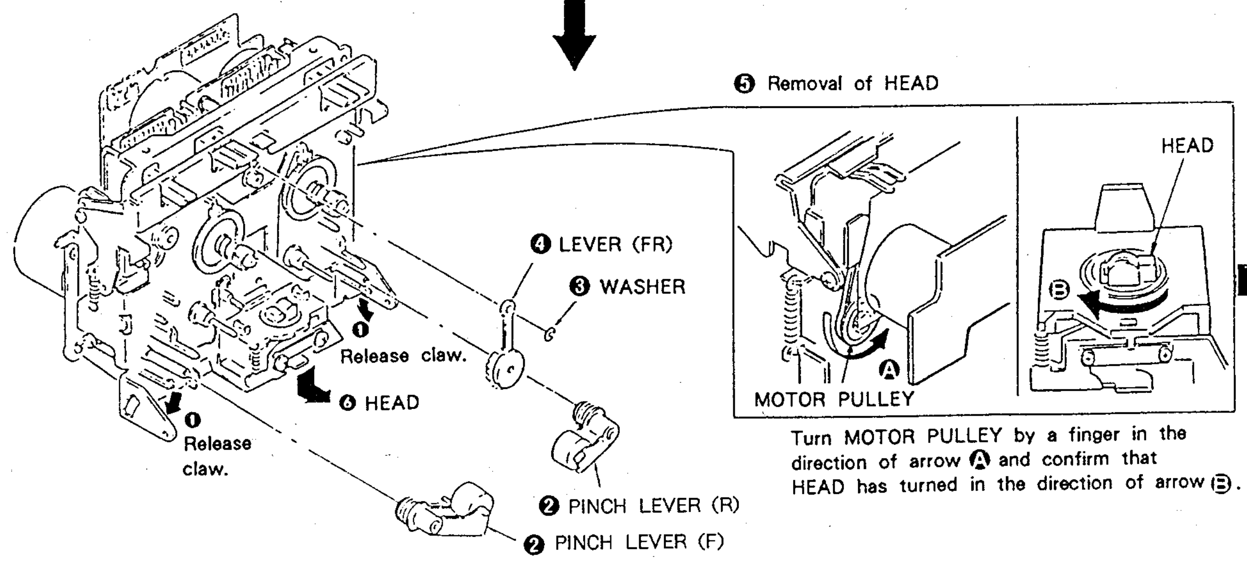
• CASSETTE HOLDER


❸ Push LEVER (LIFTER) in the direction of arrow and remove CASSETTE HOLDER.
❹ CASSETTE HOLDER
JOINT LEVER
SHAFT
❶ TENSION SPRING
❷ STOPPER WASHER

• ORNAMENTAL PLATE

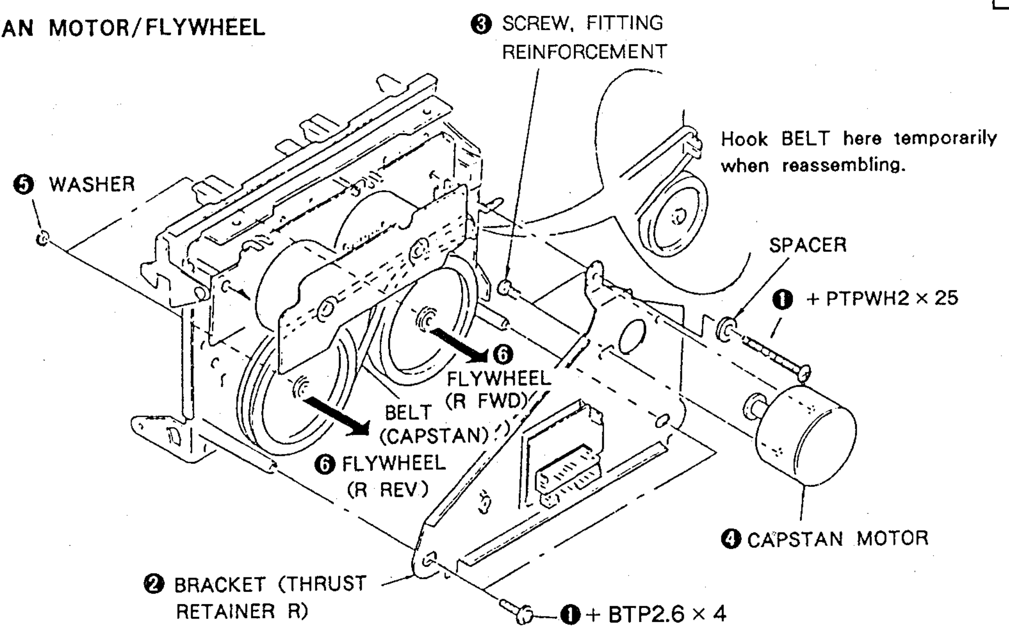

❷ Push LEVER (LIFTER) in the direction of arrow and remove ORNAMENTAL PLATE.
❸ ORNAMENTAL PLATE
❶ + BTP2.6 × 6

•PINCH LEVER/HEAD

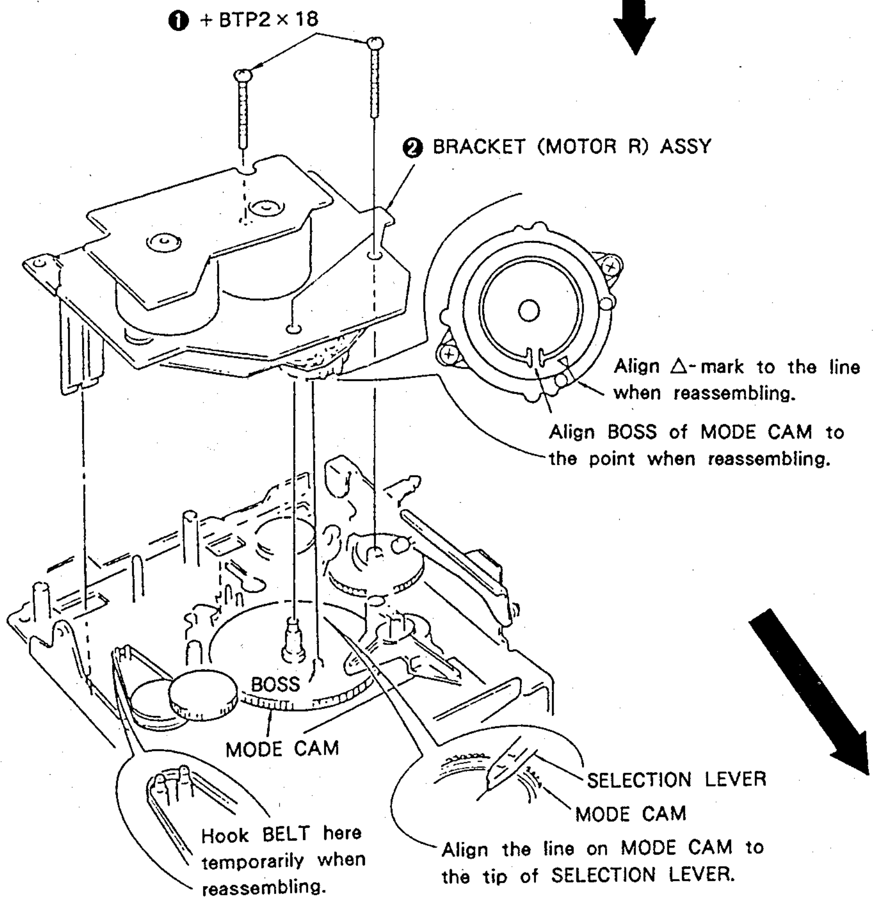

❺ Removal of HEAD
HEAD
MOTOR PULLEY
Ⓐ
Ⓑ
❹ LEVER (FR)
❸ WASHER
❶
Release claw.
❻ HEAD
❶
Release claw.
❷ PINCH LEVER (R)
❷ PINCH LEVER (F)

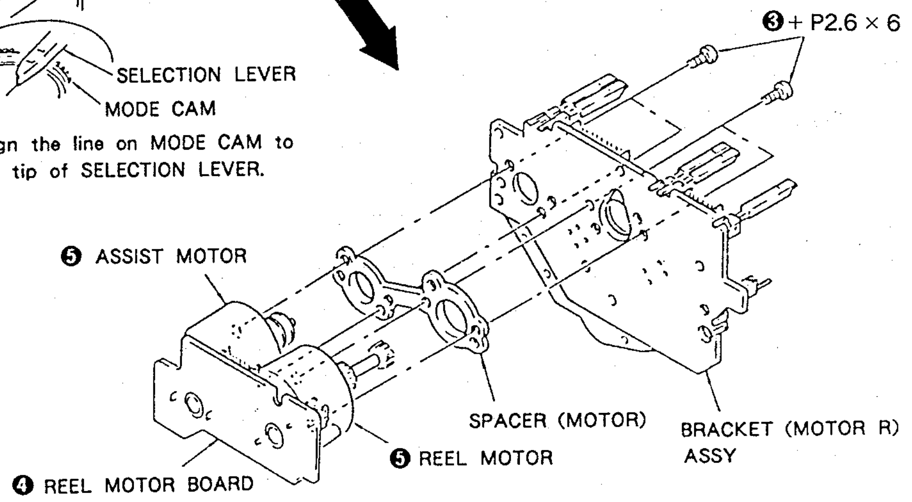
Turn MOTOR PULLEY by a finger in the direction of arrow Ⓐ and confirm that HEAD has turned in the direction of arrow Ⓑ.

CAPSTAN MOTOR/FLYWHEEL


❸ SCREW, FITTING REINFORCEMENT
Hook BELT here temporarily when reassembling.
❺ WASHER
SPACER
❶ + PTPWH2 × 25
❻
FLYWHEEL (R FWD)
BELT (CAPSTAN)
❻ FLYWHEEL (R REV)
❹ CAPSTAN MOTOR
❷ BRACKET (THRUST RETAINER R)
❶ + BTP2.6 × 4

REEL and ASSIST MOTORS


❶ + BTP2 × 18
❷ BRACKET (MOTOR R) ASSY
Align △-mark to the line when reassembling.
Align BOSS of MODE CAM to the point when reassembling.
BOSS
MODE CAM
SELECTION LEVER
MODE CAM
Hook BELT here temporarily when reassembling.
Align the line on MODE CAM to the tip of SELECTION LEVER.


❸ + P2.6 × 6
❺ ASSIST MOTOR
SPACER (MOTOR)
BRACKET (MOTOR R) ASSY
❺ REEL MOTOR
❹ REEL MOTOR BOARD

SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

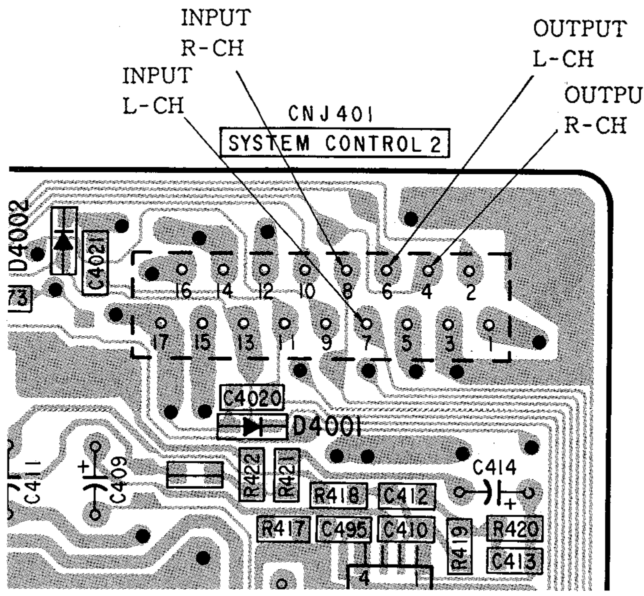
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be perfomed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g•cm (0.42to 0.83 oz•inch)
Forward back tension	CQ-102C	1 to 5g • cm (0.014 to0.069oz • inch)
Reverse	CQ-102RC	30 to 60g • cm (0.42 to 0.83oz • inch)
Reverse back tension	CQ-102RC	1 to 5g • cm (0.014 to0.069oz • inch)
Forward, Reverse	CQ-201B	65 to 90g•cm (0.9 to 1.25 oz•inch)

LINE IN/OUT Terminal (CNJ401)


INPUT
R-CH
INPUT
L-CH
OUTPUT
L-CH
OUTPUT
R-CH
CNJ401
SYSTEM CONTROL 2
D4002
C4021
16 14 12 10 8 6 4 2
17 15 13 11 9 7 5 3 1
C4020
D4001
C411
C409
R422
R421
R418
C412
C414
R417
C495
C410
R419
R420
C413

SECTION 4
ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.

- Switch position
  DOLBY NR switch : OFF
  DIR MODE switch : ⇄

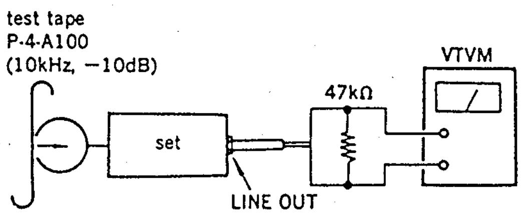
Test Tape

Tape	Contents	Use
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

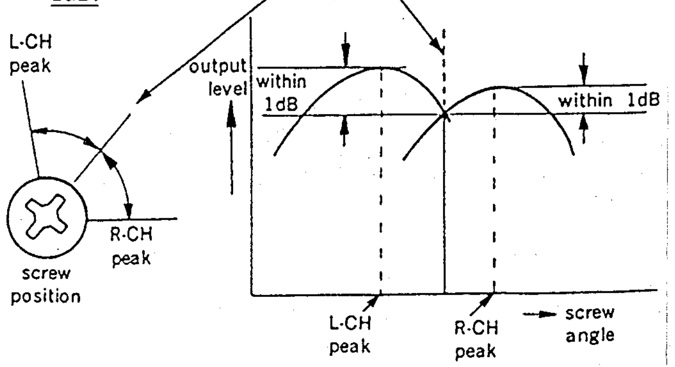
Record/Playback Head Azimuth Adjustment

Procedure:

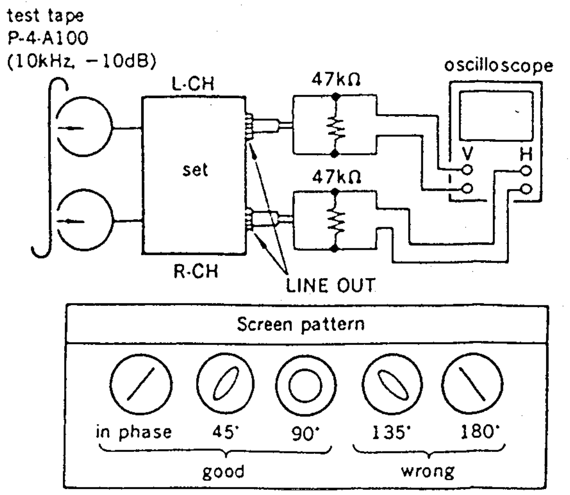
1. Forward Playback Mode


test tape
P-4-A100
(10kHz, −10dB)
set
47kΩ
VTVM
LINE OUT

2. Turn the adjustment screw for the maximum output levels. If these levels do notmatch, turn the adjustment screw until both of output levels match together within 1dB.

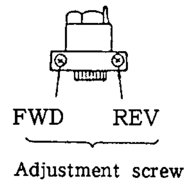


3. Playback Mode


test tape
P-4-A100
(10kHz, −10dB)
L-CH
47kΩ
oscilloscope
set
47kΩ
V
H
R-CH
LINE OUT
Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the reverse playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

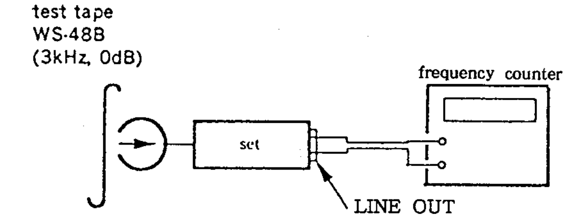
Adjustment Location: – record/playback head –


FWD
REV
Adjustment screw

Tape Speed Adjustment

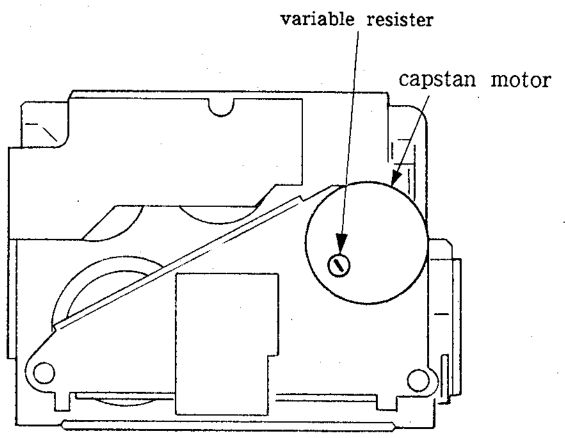
Procedure:

—Forward Playback Mode—


test tape
WS-48B
(3kHz, 0dB)
frequency counter
set
LINE OUT

1. Set to FWD playback mode.
2. Adjust motor rear side (variable resistor) so that the frequency counter reading becomes 3,000 ± 15Hz.

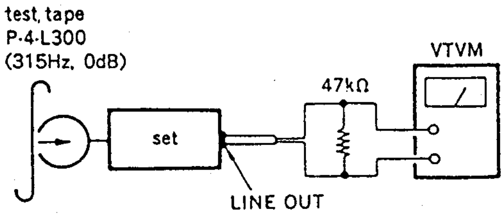
Adjustment Location: – capstan motor –


variable resister
capstan motor

Playback Level Adjustment

Procedure:

—Forward Playback Mode—


test tape
P-4-L300
(315Hz, 0dB)
VTVM
47kΩ
set
LINE OUT

Adjustment RV101 (L-ch) and RV201 (R-ch) so that the reading on VTVM meets the adjustment limits below.

Adjustment Limit:

LINE OUT level: −10 ± 0.5dB (0.23 to 0.26V)

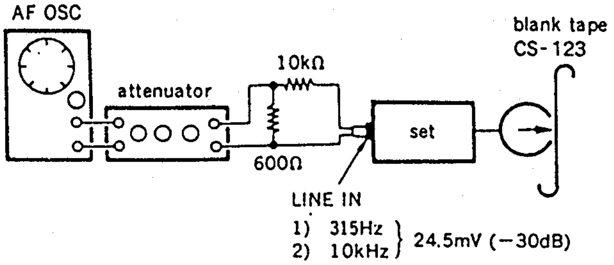
Level Difference between Channels: within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

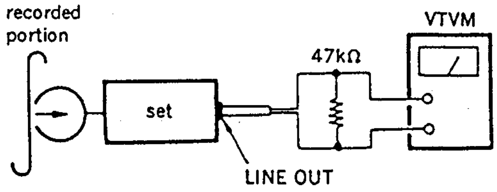
Record Bias Adjustment

Procedure:

1. Record Mode


AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-123
LINE IN
1) 315Hz
2) 10kHz
24.5mV (−30dB)

2. Playback Mode

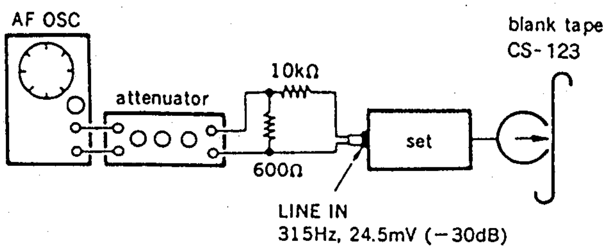

recorded
portion
VTVM
47kΩ
set
LINE OUT

Playback the signal recorded in step 1.
Confirm that the 10kHz playback output is 0 ± 0.5dB relative to the 315Hz output. If necessary, adjust RV103 (L-CH), RV203 (R-CH) and repeat the steps given above.

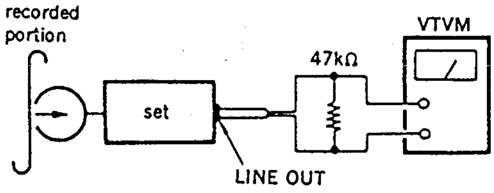
Record Level Adjustment

Procedure:

1. Record Mode


AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-123
LINE IN
315Hz, 24.5mV (−30dB)

2. Playback Mode


recorded
portion
VTVM
47kΩ
set
LINE OUT

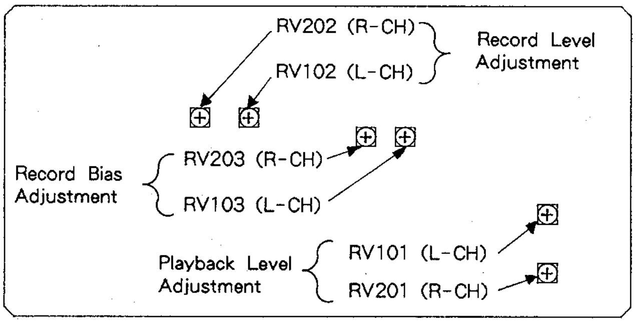
Confirm playback the tape recorded become adjustment level as follows.
If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat steps 1 and 2.

Adjustment Limits:

LINE OUT level: −30 ± 0.5dB (23 to 26mV)

Adjustment Location:

【MAIN (B) BOARD】 – component side –


RV202 (R-CH)
RV102 (L-CH)
Record Level
Adjustment
Record Bias
Adjustment
RV203 (R-CH)
RV103 (L-CH)
Playback Level
Adjustment
RV101 (L-CH)
RV201 (R-CH)

SECTION 5
DIAGRAMS

5-1. IC PIN DESCRIPTION

IC601 display microprocessor HD614023FA89

Fluorescent lamp indicator is activated by receiving data from IC702 (system controller).

Pin	Pin Name	I/O	Description
1～11	k-a	O	FL indicator tube(FL601)segment output.
12			Not used(+5.6 V).
13	VDISP	—	Power supply for activating the FL indicator tube(-22 V).
14～25		I	Not used(GND).
26	Vcc	—	Power supply terminal(+5.6 V).
27	CLK	I	Data transmission clock input from IC702(system controller).
28	DATA	I	Serial data input from IC702(system controller).
29	SYNC	I	Sync signal input which indicates the first byte of data sent from IC702(system controller).
30			Not used(GND).
31	SAF	O	LED(D601)light output in the AUTO REL LEVEL.
32～35		O	Not used.
36～42			Not used(GND).
43	RESET	I	Reset input from IC702(system controller). "L": Reset.
44	TEST	I	Not used(+5.6V).
45	OSC1	I	Clock input(4.19MHz).
46	OSC2	O	Clock output.
47	GND	—	Power supply terminal(GND).
48～50			Not used(GND).
51			Not used(Pull-up).
52			Not used.
53～57	1G－5G	O	FL indicator tube(FL601)grid output.
58～59		O	Not used.
60～64	p－l	O	FL indicator tube(FL601)segment output.

IC406 selector controller M50760-315FP

AV output is switched with the audio bus signal sent from the amplifier (TA-H5600).

Pin	Pin Name	I/O	Description
1	D3	I	Model selection input port. Connected to GND.
2	A0	O	Audio IN switch(IC403 and IC404)control output port.
3			Not used.
4	A1	O	Audio IN switch(IC403 and IC404)control output port.
5	CNVss	—	Power supply terminal(GND).
6	Vss	—	Power supply terminal(GND).
7	A2	O	Audio IN switch(IC403 and IC404)control output port.
8	B0	O	Audio OUT switch(IC405)control output port.
9	B1	O	Audio OUT switch(IC405)control output port.
10			Not used.
11	V0	O	Video IN/OUT switch(IC407)control output port.
12	V1	O	Video IN/OUT switch(IC407)control output port.
13～14			Not used(GND).
15			Not used.
16	RESET	I	Reset input. "L": Reset
17	XOUT	O	Clock output.
18	XIN	I	Clock input.
19	S	I	Serial data input(audio bus).
20	D0	I	Serial data input(audio bus).
21	D1	I	Model selection input port. Connected to +5 V(pull up).
22			Not used.
23	D2	I	Model selection input port. Connected to GND.
24	V_{DD}	—	Power supply terminal(+5 V).

IC702 system controller M50944-155SP

The system is wholly controlled by communication between IC601 (display microprocessor) and IC701 (mechanism controller).

Pin No.	Pin Name	I/O	Description
1	VREF	I	A/D input port reference voltage input(+5.6 V).
2	MET－R	I	Level meter Rch input(analog)from the meter amplifier(IC305).
3	MET－L	I	Level meter Lch input(analog)from the meter amplifier(IC305).
4	VOL A/D	I	REC LEVEL VOLUME(RV301)position detect input(analog).
5		—	Not used.
6	KEY4	I	Key switch input(analog).
7	KEY3	I	Key switch input(analog).
8	KEY2	I	Key switch input(analog).
9	KEY1	I	Key switch input(analog).
10	SYNC	O	Sync signal output which indicates the first byte of data sent to IC601.
11	FL SK	O	Data transmission clock output to IC601.
12	FL SO	O	Serial data output to IC601.
13	AUB OUT	O	Audio bus output.
14	AUB IN	I	Audio bus output(negative edge).
15	POW IN	I	Not used(pull up).
16	PB SEL	O	Not used(open).
17	AMS SEL	O	Not used(open).
18	MD REQ	I	Data request input from IC701.
19	MD SCLK	O	Data transmission clock output to IC701.
20	MD SO	O	Serial data output to IC701.
21	MD SI	I	Serial data input from IC701.
22	RES OUT	O	Reset signal output to IC601.
23		—	Not used(open).
24	AUB IN	I	Audio bus input(positive edge).
25		—	Not used(open).
26	GND	—	Power supply terminal(GND).
27	RES	I	System reset input. "L": Reset.
28	XIN	I	Clock input(4 MHz).
29	XOUT	O	Clock output.
30,31		—	Not used(open).
32	Vss	—	Power supply terminal(GND).
33	φ	—	Not used(open).
34	TEST 2	I	Test mode setting input. This set enters into the test mode when the power is on and it is set to "L"(CNP703 is shortened)*1
35	TEST 1	I	Not used(GND).
36,37	VERSEL	I	Not used(+5.6 V).
38		—	Not used(open).
39	POW ON	I	Not used(GND).
40	VOL LED	O	Volume LED ON/OFF output. "L": light up.
41	VOL－	O	Volume moter(RV301)down control output for IC706.
42	VOL＋	O	Volume moter(RV301)up control output for IC706.
43	VOL SPD	O	Volume moter speed control output. "H": SLOW, "L": FAST.
44～47		O	Not used(open).
48	BIAS 4	O	Tape bias select output. "L": Metal.
49	BIAS 2	O	Tape bias select output. "L": Cr02.
50	BIAS 1	O	Tape bias select output. "L": Normal.
51	RMUTE	O	REC mute control output.
52		O	Not used(open).
53	RELAY	O	Mechanism deck head switch control output. "L": Relay on.
54		O	Not used(open).

Pin No.	Pin Name	I/O	Description
55	B/C	O	Dolby B/C control output. "L": Dolby C, "H": Dolby B.
56	ON/OFF	O	Dolby ON/OFF control output. "C": ON, "H": OFF
57	REC/PB	O	Dolby amplifier REC/PB control output. "L": REC, "H": PB.
58	PB70µs	O	Playback equalizer characteristic switch output. "H": Normal, "L": CrO2 or Metal.
59	AMS IN	O	Signal input from the AMS amplifier(IC304). With music: "H", No music: "L".
60	AMS/BS	O	Not used.
61	PASS	O	Not used(connect to (62) pin).
62	L MUTE	O	Line mute control output. "H": MUTE.
63	AVcc	O	Power supply terminal(+5.6 V).
64	Vcc	O	Power supply terminal(+5.6 V).

*1 Test mode
When the power is on and pin ㉞ is set to "L"(CNP703 is shortened.), the set enters the electrical adjustment test mode and the followings can be available.

(1) Source monitor
Recording signals can be monitored through the LINE OUT terminal(see page 7) because the line short is removed in recording.

(2) Recording memory
Recording memory is set to ON when the tape counter is reset at the record start point.

IC701 mechanism controller M50747-B83SP

The mechanism deck is controlled by receiving data from IC702 (system controller).

Pin No.	Pin Name	I/O	Description
1	Vcc	—	Power supply terminal(+5.6 V).
2	BCTRQ	O	Assist motor torque control output. "H": Large torque "L": Small torque
3	SPEED	O	Not used(open).
4	TYPE 1	O	REC EQ select output. NORMAL tape: "H"
5	TYPE 2	O	REC EQ select output. CrO2 tape: "H"
6~9		O	Not used.
10	$\overline{\text{REVTAB}}$	I	REC switch(reverse:S1009)input. "H": When REC claw is broken.
11	$\overline{70\mu s}$	I	70µ switch(S1008)input. "H": 70µs, "L": 120µs(time constant of playback EQ).
12	$\overline{\text{METAL}}$	I	METAL switch(S1007)input. "H": METAL tape, "L": NORMAL or CrO2 tape.
13	$\overline{\text{HALF}}$	I	HALF switch(S1006)input. "L": When a tape is mounted.
14	S REEL	I	Supply reel base sensor(IC1001)input.
15	T REEL	I	Take-up reel base sensor(IC1002)input.
16,17		I	Not used(GND).
18		—	Not used(open).
19	SCLK	I	Data transmission clock input from IC702.
20	SO	O	Serial data output to IC702.
21	SI	I	Serial data input from IC702.
22	REQ	O	Data request output to IC702.
23~25		—	Not used(open).
26	$\overline{\text{INT}}$	I	Not used(+5.6 V).
27	CN Vss	—	Power supply terminal(GND).
28	$\overline{\text{RES}}$	I	Reset input. "L": Reset.
29	XIN	I	Clock input(4 MHz).
30	XOUT	O	Clock output.
31	ϕ		Not used.
32	Vss	—	Power supply terminal(GND).
33~50			Not used.

Pin No.	Pin Name	I/O	Description
51	ASSIST1	O	Head base is"H" when turned to the FWD direction. *1
52	ASSIST2	O	Head base is"H" when turned to the RVS direction.
53	REEL 1	O	Reel motor rotation control output. Reverse: "H" *2
54	REEL 2	O	Reel motor rotation control output. Forward: "H"
55	TQ1	O	Reel motor torque control output. PLAY: "H" *3
56	TQ2	O	Reel motor torque control output. FF/REW: "H"
57~60	CAM1-4	I	Rotary encoder input to detect the position of the head base of the mechanical block. *4
61	$\overline{\text{OPEN}}$	I	OPEN switch(S1004)input. "L": When the cassette holder completely opens.
62	$\overline{\text{CLOSE}}$	I	CLOSE switch(S1003)input. "L": When the cassette holder completely closed.
63	$\overline{\text{DOOR}}$	I	DOOR switch(S1002)input. "L": When the cassette holder is driven from open to close state.
64	$\overline{\text{FWDTAB}}$	I	REC switch (forward : S1005) input. "H" : When REC claw is broken.

*1

	STOP	Turn to FWD directiom	Turn to RVS direction	STOP
$\overline{\text{ASSIST 1}}$	L	H	L	H
$\overline{\text{ASSIST 2}}$	L	L	H	H

*2

	STOP	FWD/CLOSE	REV/OPEN	BRAKE
REEL 1	L	L	H	H
REEL 2	L	H	L	H

*3

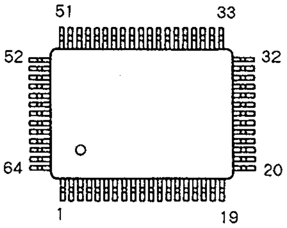
	OPEN/CLOSE (large torque)	FF/REW (medium torque)	PLAY (small torque)	INHIBIT
TQ 1	L	L	H	H
TQ 2	L	H	L	H

*4

	Forward					Reverse			
	FWD PLAY	AMS/PAUSE	STOP	FF/REW	EJECT	FF/REW	STOP	AMS/PAUSE	RVS PLAY
CAM1	H	H	L	H	L	H	L	H	H
CAM2	H	L	H	H	L	H	H	L	H
CAM3	H	H	H	H	H	L	L	L	L
CAM4	H	H	H	L	L	L	H	H	H

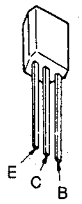
5-2. SEMICONDUCTOR LEAD LAYOUTS

HD614023FA89

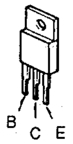

51
33
52
32
64
20
1
19

(TOP VIEW)

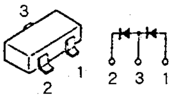
DTA114ES
DTA144ES
DTC114ES
DTC143TS
DTC144ES
2SA1344



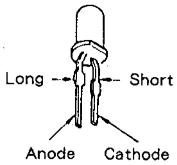
2SB1094-L
2SD2012



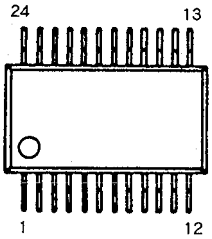
DCA010



SEL2210S-C

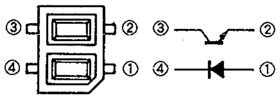

Long
Short
Anode
Cathode

M50760-315FP

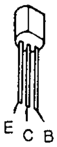


(TOP VIEW)

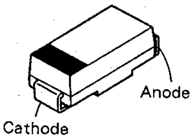
GP2S22B



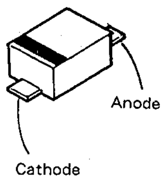
2SC945-P
2SC3330-T



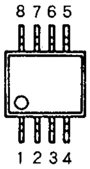
EC10DS2


Anode
Cathode

1SS355

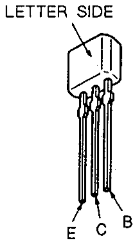

Anode
Cathode

M5218AFP

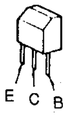


(TOP VIEW)

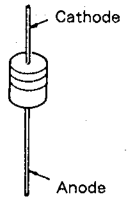
2SA1317-STN
2SD1012-FG


LETTER SIDE
E
C
B

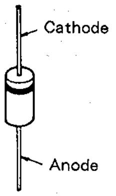
2SD774-34



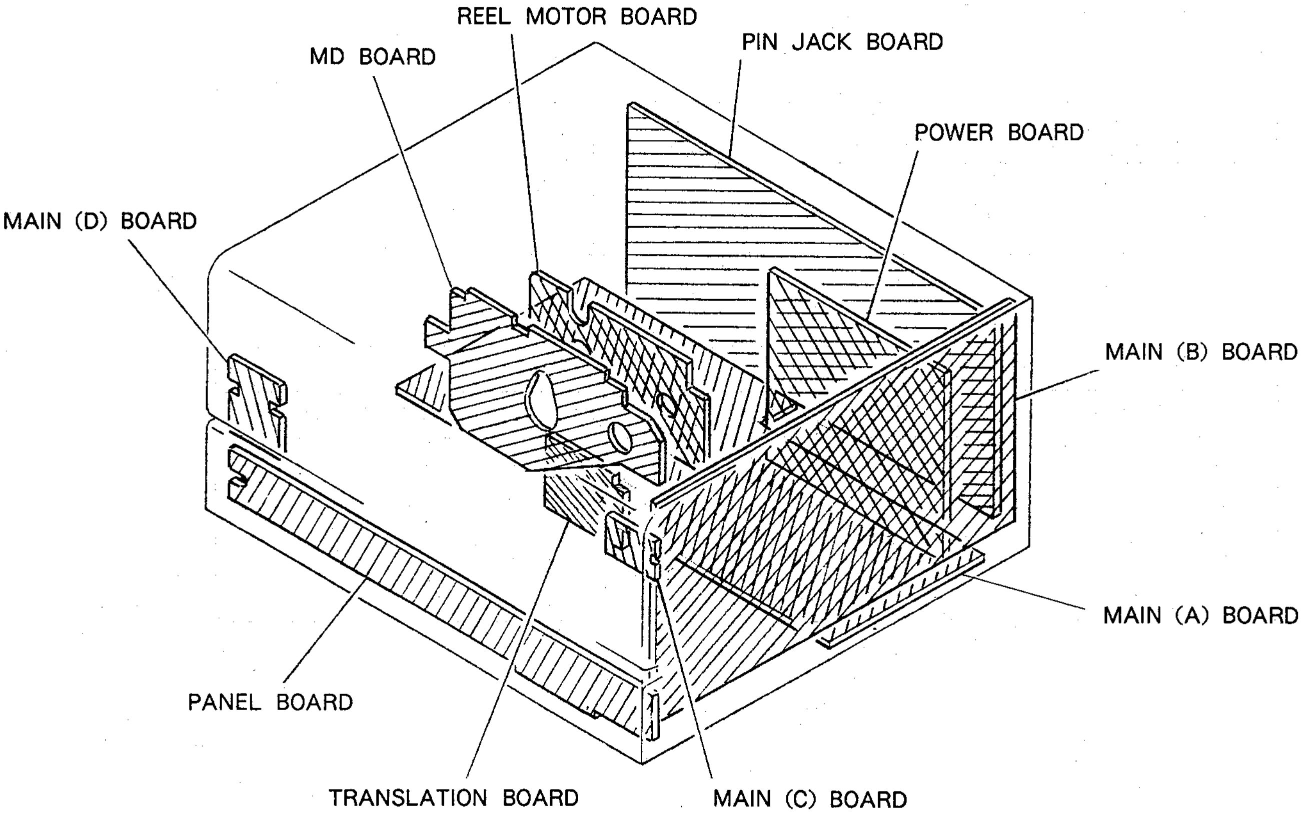
HZS7C2L
RD5.6ESB2
1SS120


Cathode
Anode

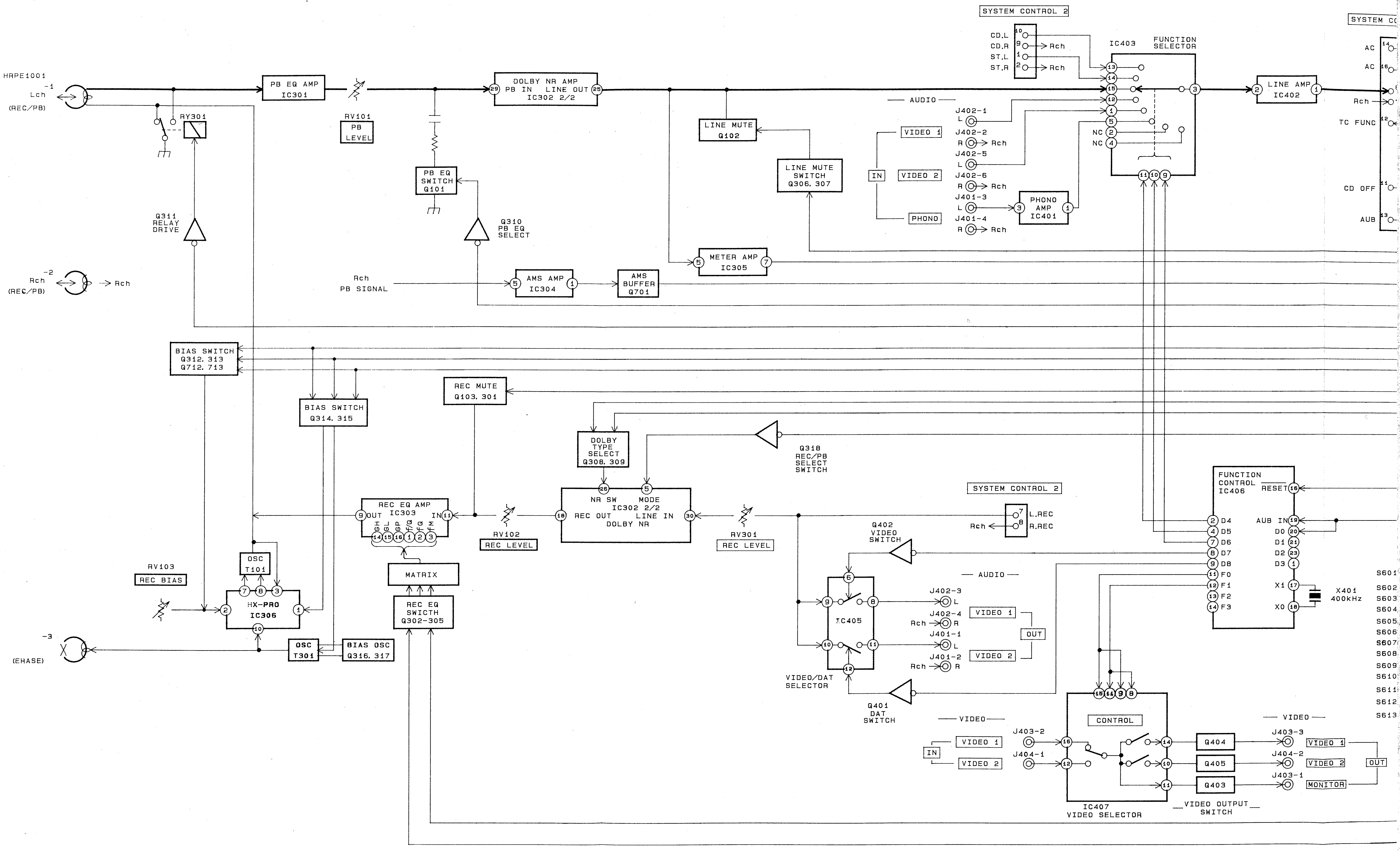
10E2N

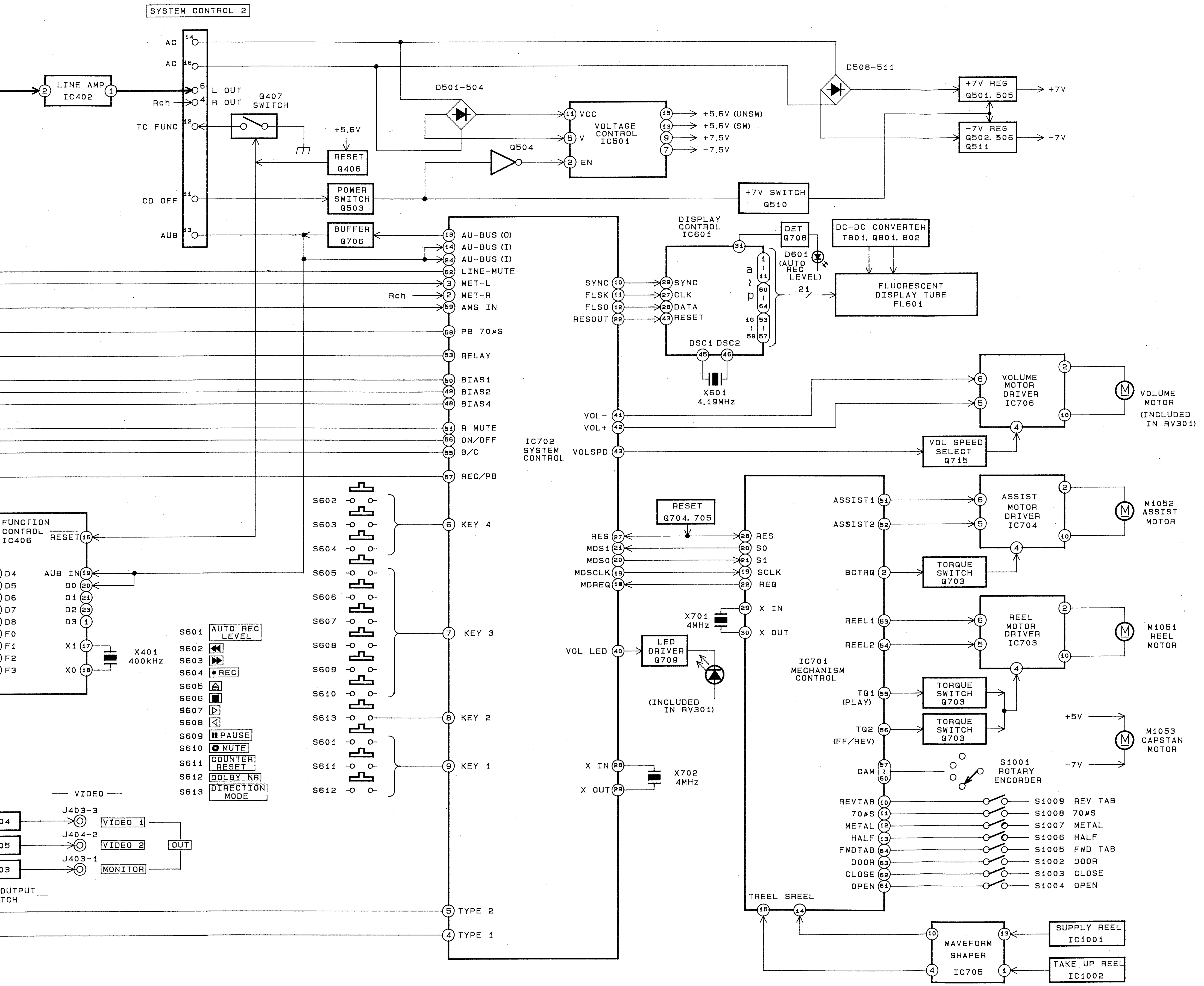

Cathode
Anode

5-3. CRICUIT BOARDS LOCATION


REEL MOTOR BOARD
MD BOARD
PIN JACK BOARD
POWER BOARD
MAIN (D) BOARD
MAIN (B) BOARD
MAIN (A) BOARD
PANEL BOARD
TRANSLATION BOARD
MAIN (C) BOARD

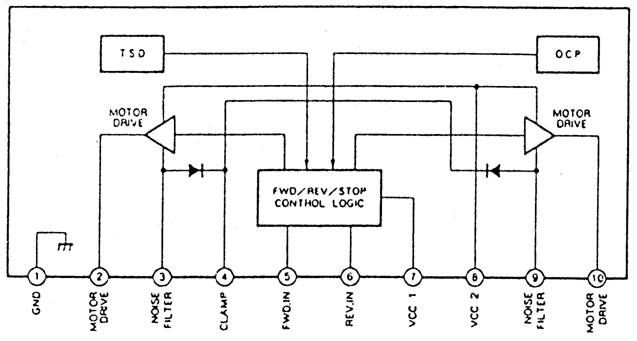
5-4. BLOCK DIAGRAM


HRPE1001
-1
Lch
(REC/PB)
RY301
PB EQ AMP
IC301
RV101
PB LEVEL
DOLBY NR AMP
PB IN LINE OUT
IC302 2/2
PB EQ SWITCH
Q101
Q311
RELAY DRIVE
Q310
PB EQ SELECT
LINE MUTE
Q102
LINE MUTE SWITCH
Q306, 307
METER AMP
IC305
-2
Rch
(REC/PB)
Rch
Rch
PB SIGNAL
AMS AMP
IC304
AMS BUFFER
Q701
SYSTEM CONTROL 2
CD.L
CD.R
ST.L
ST.R
Rch
Rch
IC403
FUNCTION SELECTOR
AUDIO
J402-1
L
VIDEO 1
J402-2
R
Rch
J402-5
L
IN
VIDEO 2
J402-6
R
Rch
J401-3
L
PHONO
J401-4
R
Rch
PHONO AMP
IC401
NC
NC
LINE AMP
IC402
SYSTEM C
AC
AC
Rch
TC FUNC
CD OFF
AUB
BIAS SWITCH
Q312, 313
Q712, 713
BIAS SWITCH
Q314, 315
REC MUTE
Q103, 301
DOLBY TYPE SELECT
Q308, 309
Q318
REC/PB SELECT SWITCH
NR SW
MODE
IC302 2/2
REC OUT
LINE IN
DOLBY NR
REC EQ AMP
OUT
IC303
IN
GH GL GP f/Q f/Q FM
RV102
REC LEVEL
RV301
REC LEVEL
SYSTEM CONTROL 2
Rch
L.REC
R.REC
FUNCTION CONTROL
IC406
RESET
D4
D5
D6
D7
D8
F0
F1
F2
F3
AUB IN
D0
D1
D2
D3
X1
X0
X401
400kHz
S601
S602
S603
S604
S605
S606
S607
S608
S609
S610
S611
S612
S613
Q402
VIDEO SWITCH
AUDIO
IC405
J402-3
L
J402-4
Rch
R
VIDEO 1
OUT
J401-1
L
J401-2
Rch
R
VIDEO 2
VIDEO/DAT SELECTOR
Q401
DAT SWITCH
RV103
REC BIAS
OSC
T101
HX-PRO
IC306
MATRIX
REC EQ SWITCH
Q302-305
-3
(EHASE)
OSC
T301
BIAS OSC
Q316, 317
VIDEO
J403-2
J404-1
IN
VIDEO 1
VIDEO 2
CONTROL
IC407
VIDEO SELECTOR
Q404
Q405
Q403
VIDEO OUTPUT SWITCH
VIDEO
J403-3
J404-2
J403-1
VIDEO 1
VIDEO 2
MONITOR
OUT

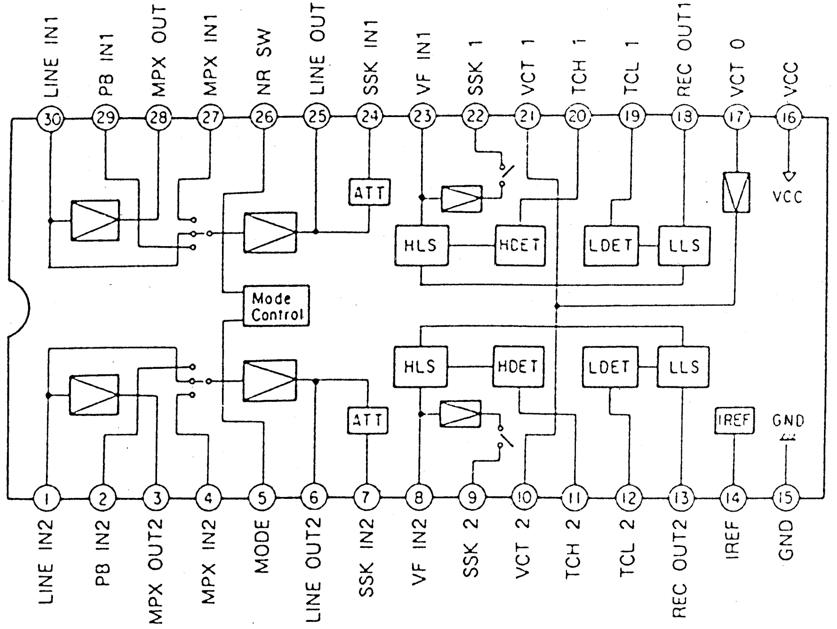

SYSTEM CONTROL 2
AC
AC
LINE AMP
IC402
Rch
L OUT
R OUT
Q407
SWITCH
TC FUNC
+5.6V
RESET
Q406
CD OFF
POWER
SWITCH
Q503
AUB
BUFFER
Q706
D501-504
Q504
VCC
VOLTAGE
CONTROL
IC501
V
EN
+5.6V (UNSW)
+5.6V (SW)
+7.5V
-7.5V
D508-511
+7V REG
Q501, 505
+7V
-7V REG
Q502, 506
Q511
-7V
+7V SWITCH
Q510
AU-BUS (O)
AU-BUS (I)
AU-BUS (I)
LINE-MUTE
MET-L
MET-R
Rch
AMS IN
PB 70μS
RELAY
BIAS1
BIAS2
BIAS4
R MUTE
ON/OFF
B/C
REC/PB
KEY 4
KEY 3
KEY 2
KEY 1
TYPE 2
TYPE 1
IC702
SYSTEM
CONTROL
SYNC
FLSK
FLSO
RESOUT
VOL-
VOL+
VOLSPD
RES
MDSI
MDSO
MDSCLK
MDREQ
VOL LED
X IN
X OUT
DISPLAY
CONTROL
IC601
SYNC
CLK
DATA
RESET
DSC1 DSC2
X601
4.19MHz
DET
Q708
D601
(AUTO
REC
LEVEL)
21
DC-DC CONVERTER
T801, Q801, 802
FLUORESCENT
DISPLAY TUBE
FL601
VOLUME
MOTOR
DRIVER
IC706
VOLUME
MOTOR
(INCLUDED
IN RV301)
VOL SPEED
SELECT
Q715
RESET
Q704, 705
LED
DRIVER
Q709
(INCLUDED
IN RV301)
X701
4MHz
X702
4MHz
IC701
MECHANISM
CONTROL
RES
SO
SI
SCLK
REQ
X IN
X OUT
ASSIST1
ASSIST2
ASSIST
MOTOR
DRIVER
IC704
M1052
ASSIST
MOTOR
BCTRQ
TORQUE
SWITCH
Q703
REEL1
REEL2
REEL
MOTOR
DRIVER
IC703
M1051
REEL
MOTOR
TQ1
(PLAY)
TQ2
(FF/REV)
+5V
-7V
M1053
CAPSTAN
MOTOR
CAM
S1001
ROTARY
ENCORDER
REVTAB
70μS
METAL
HALF
FWDTAB
DOOR
CLOSE
OPEN
S1009 REV TAB
S1008 70μS
S1007 METAL
S1006 HALF
S1005 FWD TAB
S1002 DOOR
S1003 CLOSE
S1004 OPEN
TREEL SREEL
WAVEFORM
SHAPER
IC705
SUPPLY REEL
IC1001
TAKE UP REEL
IC1002
FUNCTION
CONTROL
IC406
RESET
AUB IN
D0
D1
D2
D3
D4
D5
D6
D7
D8
F0
F1
F2
F3
X1
X0
X401
400kHz
S601 AUTO REC LEVEL
S602 ◀◀
S603 ▶▶
S604 ● REC
S605 ⏏
S606 ■
S607 ▷
S608 ◁
S609 ❚❚ PAUSE
S610 ● MUTE
S611 COUNTER RESET
S612 DOLBY NR
S613 DIRECTION MODE
S602
S603
S604
S605
S606
S607
S608
S609
S610
S613
S601
S611
S612
VIDEO
J403-3
VIDEO 1
J404-2
VIDEO 2
OUT
J403-1
MONITOR
OUTPUT
TCH

• IC BLOCK DIAGRAM

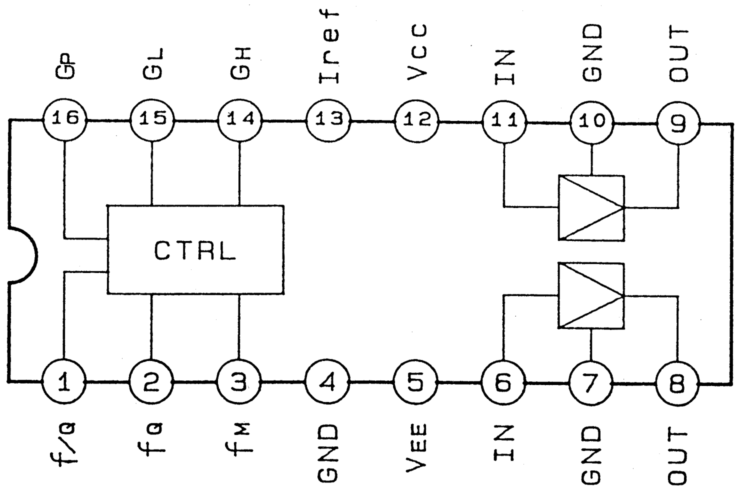
IC703,706 BA6219B
IC704 LB1641


TSD
OCP
MOTOR DRIVE
MOTOR DRIVE
FWD/REV/STOP CONTROL LOGIC
1 GND
2 MOTOR DRIVE
3 NOISE FILTER
4 CLAMP
5 FWDIN
6 REVIN
7 VCC 1
8 VCC 2
9 NOISE FILTER
10 MOTOR DRIVE

IC302 CXA1330S


30 LINE IN1
29 PB IN1
28 MPX OUT1
27 MPX IN1
26 NR SW
25 LINE OUT1
24 SSK IN1
23 VF IN1
22 SSK 1
21 VCT 1
20 TCH 1
19 TCL 1
18 REC OUT1
17 VCT 0
16 VCC
ATT
HLS
HDET
LDET
LLS
VCC
Mode Control
ATT
HLS
HDET
LDET
LLS
IREF
GND
1 LINE IN2
2 PB IN2
3 MPX OUT2
4 MPX IN2
5 MODE
6 LINE OUT2
7 SSK IN2
8 VF IN2
9 SSK 2
10 VCT 2
11 TCH 2
12 TCL 2
13 REC OUT2
14 IREF
15 GND

IC303 CXA1198AP


16 GP
15 GL
14 GH
13 Iref
12 Vcc
11 IN
10 GND
9 OUT
CTRL
1 f/Q
2 fQ
3 fM
4 GND
5 VEE
6 IN
7 GND
8 OUT

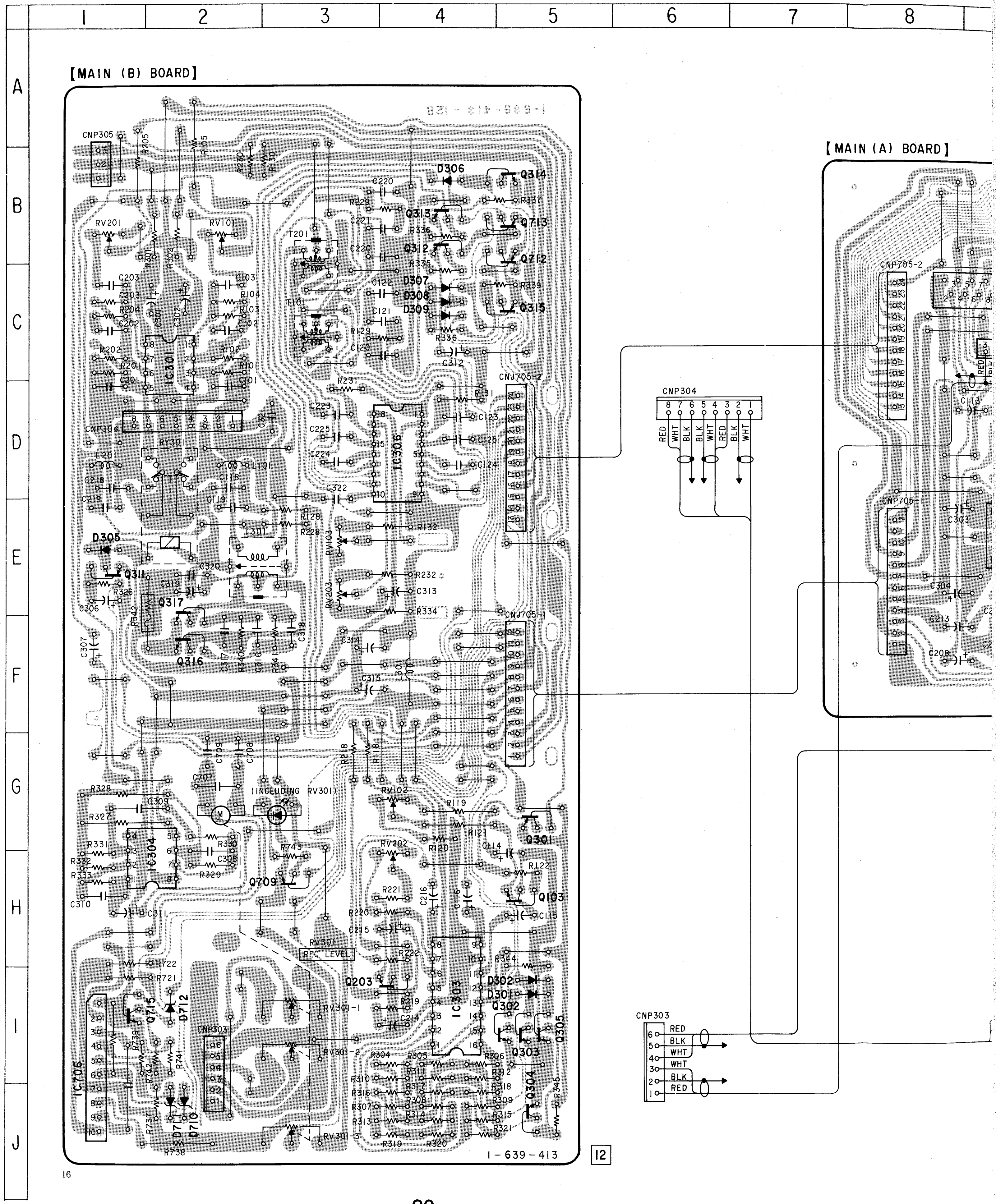
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	C-12	Q306	D-11
D201	C-13	Q307	E-11
D301	I-5	Q308	F-11
D302	I-5	Q309	E-11
D303	E-11	Q310	E-11
D304	E-11	Q311	E-1
D305	E-1	Q312	B-4
D306	B-4	Q313	B-4
D307	C-4	Q314	B-5
D308	C-4	Q315	C-5
D309	C-4	Q316	F-2
D601	A-20	Q317	E-2
D701	C-17	Q318	F-11
D702	C-17	Q701	F-13
D703	E-12	Q702	F-13
D704	E-12	Q703	E-13
D705	F-12	Q704	D-17
D706	F-12	Q705	C-17
D707	E-14	Q706	C-15
D708	E-14	Q707	C-17
D709	E-13	Q708	B-19
D710	J-2	Q709	H-3
D711	J-2	Q712	B-5
D712	I-2	Q713	B-5
D713	C-15	Q715	I-1
D714	C-17	Q801	B-13
D720	C-10	Q802	B-11
D721	C-11		
D722	C-12		
D750	B-13		
D751	D-14		
D752	B-19		
D753	A-19		
D801	D-16		
D802	C-15		
D803	C-15		
D804	C-14		
D805	C-14		
IC301	C-2		
IC302	E-9		
IC303	I-4		
IC304	H-2		
IC305	D-13		
IC306	D-4		
IC701	E-16		
IC702	B-15		
IC703	E-13		
IC704	D-13		
IC705	D-15		
IC706	I-1		
IC1001	H-18		
IC1002	H-19		
Q101	D-10		
Q102	D-11		
Q103	H-5		
Q201	F-10		
Q202	D-11		
Q203	I-4		
Q301	G-5		
Q302	I-5		
Q303	I-5		
Q304	J-5		
Q305	I-5		

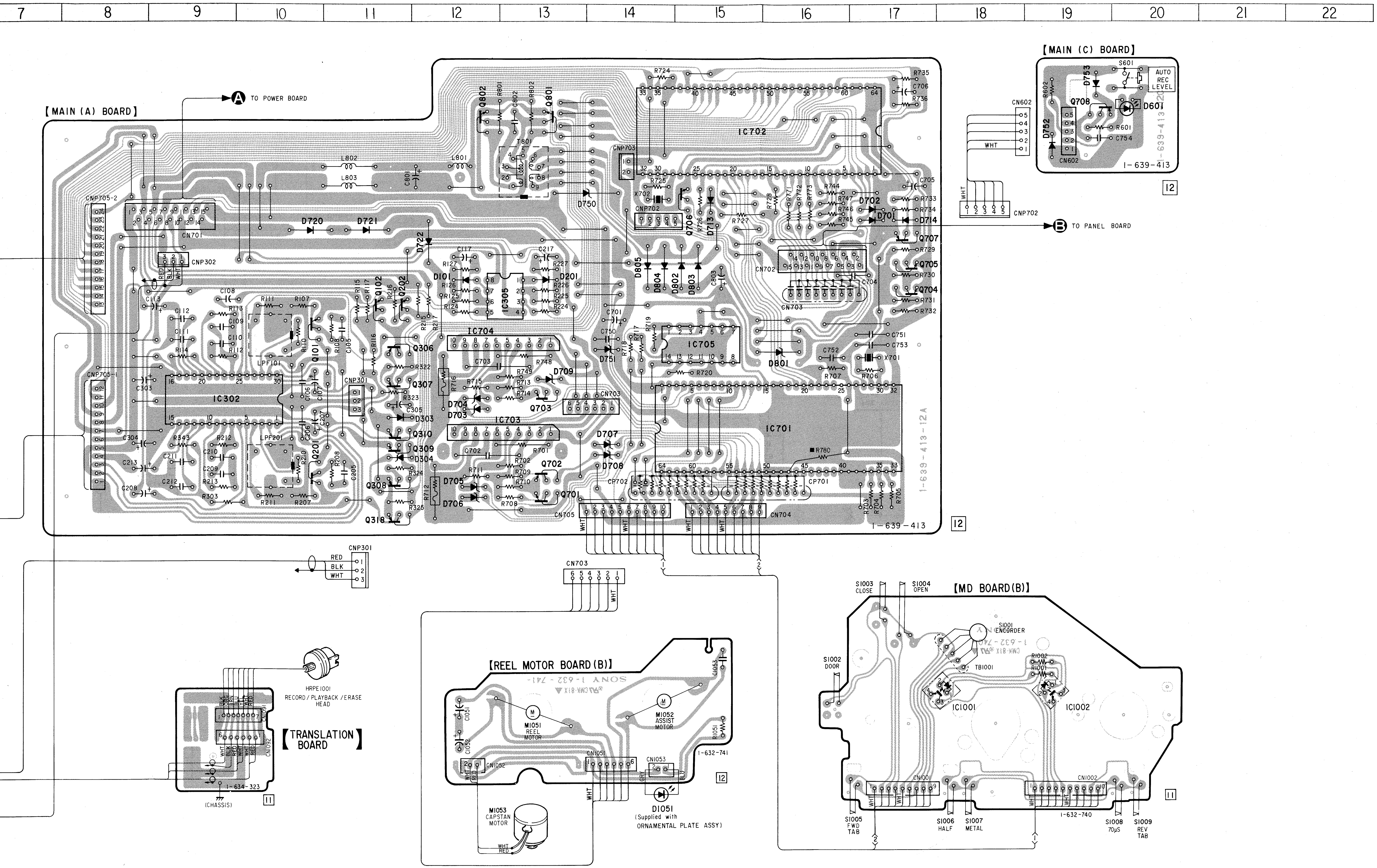
Note on Mounting Diagram:

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.

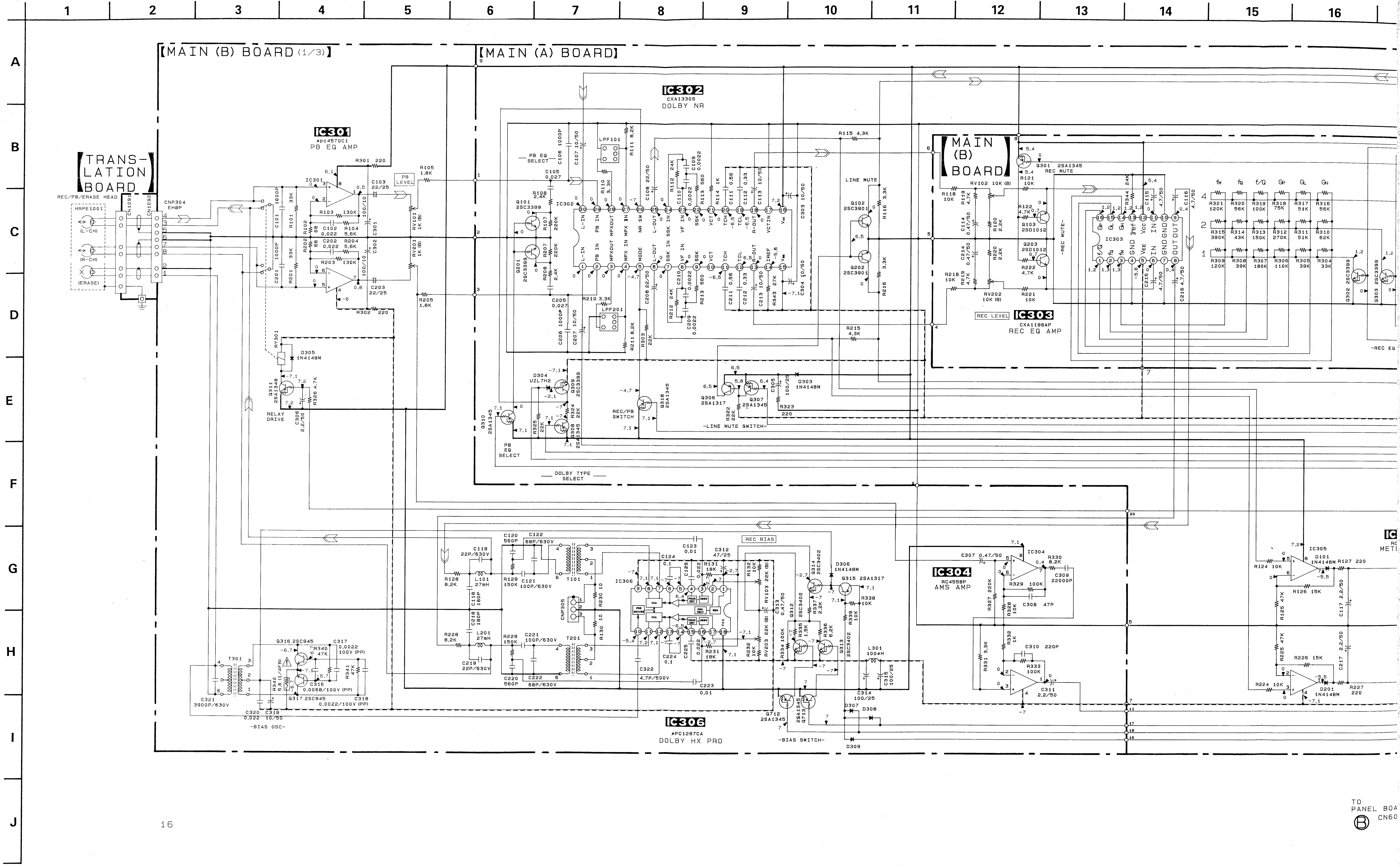
5-5. PRINTED WIRING BOARDS – MAIN SECTION – • See page 14 for Semiconductor Lead Layouts and Circuit Boards Locatio

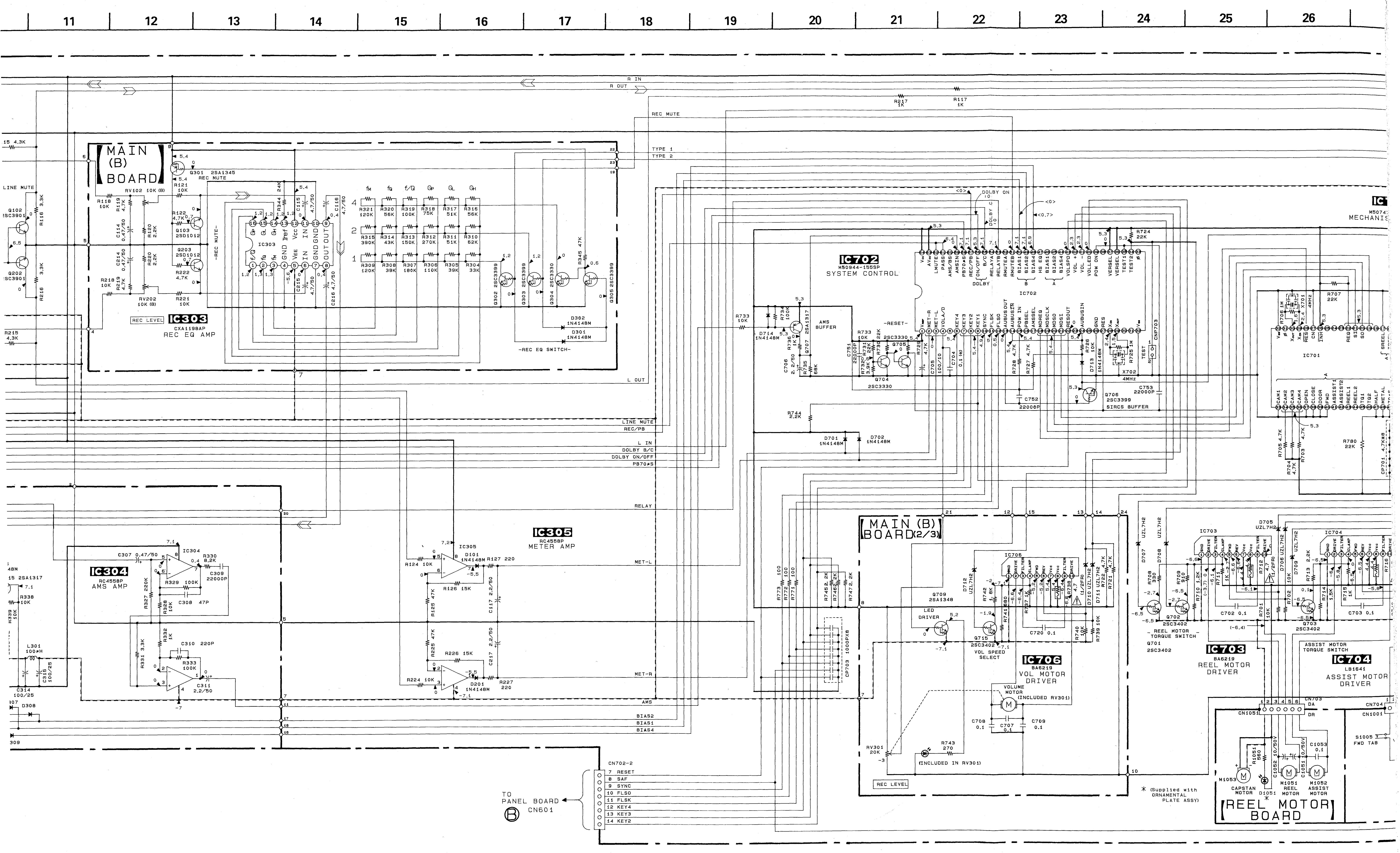

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
[MAIN (B) BOARD]
[MAIN (A) BOARD]
1-639-413-12B
CNP305
RV201
RV101
T201
T101
D306
Q314
Q313
Q713
Q312
Q712
D307
D308
D309
Q315
IC301
CNP304
RY301
IC306
CNJ705-2
CNJ705-1
CNP705-2
CNP705-1
D305
Q311
Q317
Q316
L301
IC304
Q709
RV102
RV202
Q301
Q103
RV301 REC LEVEL
(INCLUDING RV301)
Q203
IC303
D302
D301
Q302
Q303
Q304
Q305
IC706
Q715
D712
D711
D710
CNP303
RV301-1
RV301-2
RV301-3
CNP304
RED WHT BLK WHT RED BLK WHT
CNP303
RED BLK WHT WHT BLK RED
1-639-413
12
16

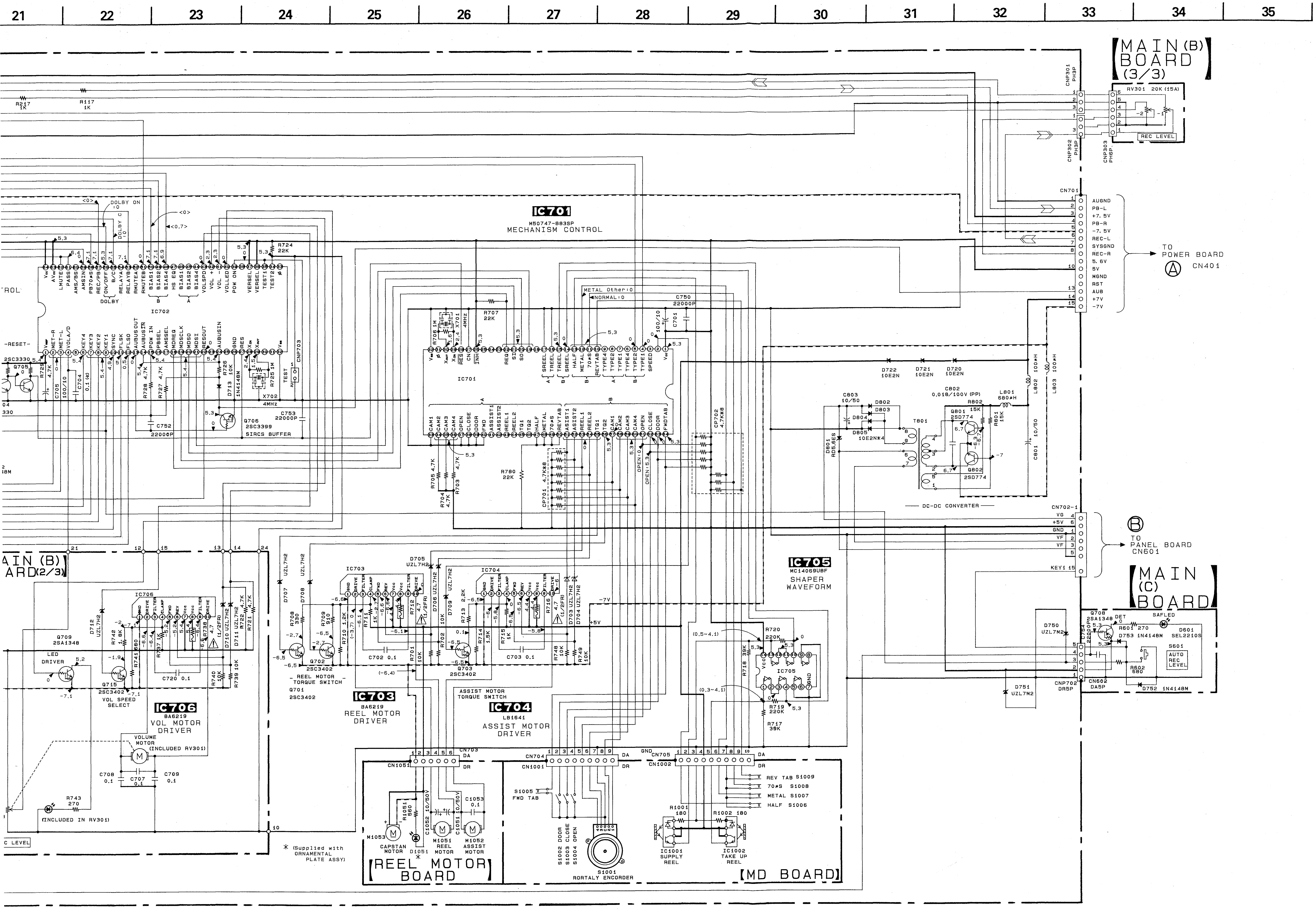
ts and Circuit Boards Location.


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
【MAIN (A) BOARD】
TO POWER BOARD
【MAIN (C) BOARD】
AUTO REC LEVEL
1-639-413
TO PANEL BOARD
IC702
IC701
IC705
IC704
IC703
IC302
IC305
CNP705-2
CNP705-1
CN701
CNP302
CNP301
CN705
CN704
CN703
CNP702
CN602
1-639-413-12A
1-639-413
12
RED
BLK
WHT
HRPE1001 RECORD/PLAYBACK/ERASE HEAD
【TRANSLATION BOARD】
1-634-323
(CHASSIS)
11
【REEL MOTOR BOARD (B)】
M1051 REEL MOTOR
M1052 ASSIST MOTOR
M1053 CAPSTAN MOTOR
D1051 (Supplied with ORNAMENTAL PLATE ASSY)
CN1051
CN1052
CN1053
1-632-741
12
【MD BOARD (B)】
S1003 CLOSE
S1004 OPEN
S1001 ENCORDER
S1002 DOOR
TB1001
IC1001
IC1002
CN1001
CN1002
1-632-740
S1005 FWD TAB
S1006 HALF
S1007 METAL
S1008 70μS
S1009 REV TAB
11

5-6. SCHEMATIC DIAGRAM – MAIN SECTION – • See page 28 for Note on Schematic Diagram.

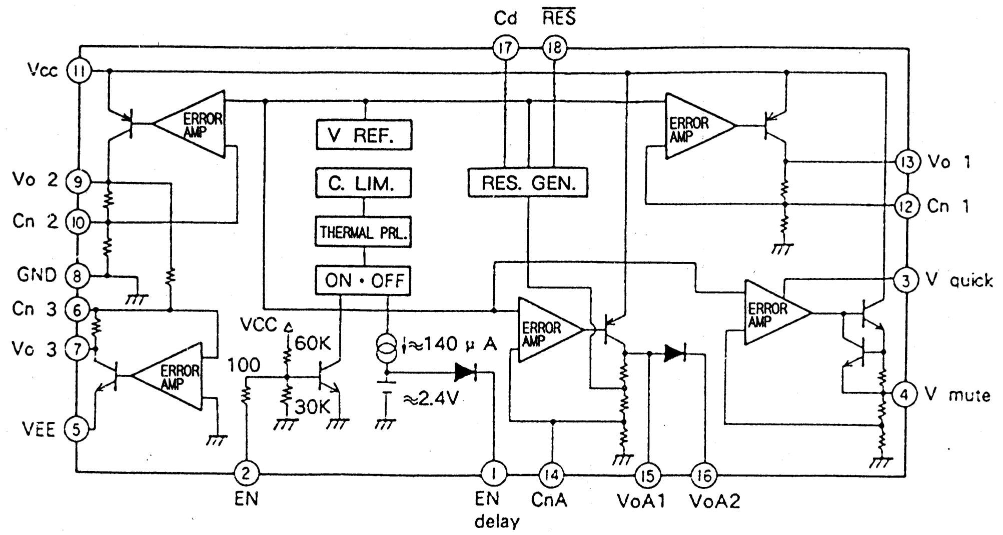

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
【MAIN (B) BOARD (1/3)】
【MAIN (A) BOARD】
【TRANS-LATION BOARD】
REC/PB/ERASE HEAD
HRPE1001
(L-CH)
(R-CH)
(ERASE)
CN1091
CN1092
CNP304 EHBP
IC301
μPC4570C1
PB EQ AMP
PB LEVEL
RV101 1K (B)
RV201 1K (B)
IC302
CXA1330S
DOLBY NR
PB EQ SELECT
LPF101
LPF201
Q101 2SC3399
Q201 2SC3399
L-IN
PB IN
MPXOUT
MPX IN
NR SW
L-OUT
SSK IN
VF IN
SSK
VCT
TCH
TCL
R-OUT
VCTIN
IREF
MODE
LINE MUTE
Q102 2SC3901
Q202 2SC3901
R115 4.3K
R215 4.3K
【MAIN (B) BOARD】
Q301 2SA1345 REC MUTE
RV102 10K (B)
RV202 10K (B)
Q103 2SD1012
Q203 2SD1012
-REC MUTE-
REC LEVEL
IC303
CXA1198AP
REC EQ AMP
fH fG f/Q GP GL GH
RY301
D305 1N4148M
Q311 2SA1348
RELAY DRIVE
D304 UZL7H2
Q309 2SC3399
Q310 2SA1345
Q308 2SA1345
PB EQ SELECT
REC/PB SWITCH
Q318 2SA1345
Q306 2SA1317
Q307 2SA1345
D303 1N4148M
-LINE MUTE SWITCH-
DOLBY TYPE SELECT
REC BIAS
T101
T201
L101 27mH
L201 27mH
CNP305
IC306
μPC1297CA
DOLBY HX PRO
RV103 22K (B)
RV203 22K (B)
Q312 2SC3402
Q313 2SC3402
Q314 2SC3402
D306 1N4148M
Q315 2SA1317
L301 100μH
Q712 2SA1345
Q713 2SA1345
D307 D308 D309
-BIAS SWITCH-
T301
Q316 2SC945
Q317 2SC945
-BIAS OSC-
IC304
RC4558P
AMS AMP
IC305
D101 1N4148M
D201 1N4148M
TO PANEL BOA
CN60
16

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
MAIN (B) BOARD
IC303
CXA1198AP
REC EQ AMP
REC LEVEL
RV102 10K (B)
RV202 10K (B)
Q301 2SA1345
REC MUTE
Q102 2SC3901
Q202 2SC3901
Q103 2SD1012
Q203 2SD1012
LINE MUTE
-REC MUTE-
fH
fQ
f/Q
GP
GL
GH
R321 120K
R320 56K
R319 100K
R318 75K
R317 51K
R316 56K
R315 390K
R314 43K
R313 150K
R312 270K
R311 51K
R310 62K
R309 120K
R308 39K
R307 180K
R306 110K
R305 39K
R304 33K
Q302 2SC3399
Q303 2SC3399
Q304 2SC3330
Q305 2SC3399
R345 47K
D302 1N4148M
D301 1N4148M
-REC EQ SWITCH-
R IN
R OUT
R217 1K
R117 1K
REC MUTE
TYPE 1
TYPE 2
L OUT
LINE MUTE
REC/PB
L IN
DOLBY B/C
DOLBY ON/OFF
PB70μS
RELAY
MET-L
MET-R
AMS
BIAS2
BIAS1
BIAS4
IC702
M50944-155SP
SYSTEM CONTROL
DOLBY ON
AMS BUFFER
-RESET-
Q707 2SA1317
D714 1N4148M
Q704 2SC3330
Q705 2SC3330
C751 22000P
C752 22000P
C753 22000P
X702 4MHz
Q706 2SC3399
SIRCS BUFFER
R744 2.2K
D701 1N4148M
D702 1N4148M
IC701
M5074
MECHANIC
X701 4MHz
R707 22K
R724 22K
R780 22K
IC305
RC4558P
METER AMP
D101 1N4148M
D201 1N4148M
R127 220
R227 220
R124 10K
R224 10K
R126 15K
R226 15K
R125 47K
R225 47K
C117 2.2/50
C217 2.2/50
IC304
RC4558P
AMS AMP
C307 0.47/50
R330 8.2K
C309 22000P
R329 100K
C308 47P
R327 220K
R328 10K
R332 1K
C310 220P
R333 100K
R331 3.3K
C311 2.2/50
L301 100μH
C314 100/25
C315 100/25
D308
CN702-2
7 RESET
8 SAF
9 SYNC
10 FLSO
11 FLSK
12 KEY4
13 KEY3
14 KEY2
TO PANEL BOARD B CN601
CP703 1000P×8
MAIN (B) BOARD(2/3)
IC706
BA6219
VOL MOTOR DRIVER
Q709 2SA1348
LED DRIVER
Q715 2SC3402
VOL SPEED SELECT
VOLUME MOTOR (INCLUDED RV301)
C708 0.1
C707 0.1
C709 0.1
C720 0.1
RV301 20K
R743 270
(INCLUDED IN RV301)
REC LEVEL
D712 UZL7H2
D710 UZL7H2
D711 UZL7H2
IC703
BA6219
REEL MOTOR DRIVER
Q702 2SC3402
Q701 2SC3402
- REEL MOTOR TORQUE SWITCH -
Q703 2SC3402
ASSIST MOTOR TORQUE SWITCH
IC704
LB1641
ASSIST MOTOR DRIVER
D705 UZL7H2
D707 UZL7H2
D708 UZL7H2
C702 0.1
C703 0.1
CN703 DA
CN1051
CN704
CN1001
S1005 FWD TAB
R1051 560
C1052 10/50V
C1051 10/50V
C1053 0.1
M1053 CAPSTAN MOTOR
D1051
M1051 REEL MOTOR
M1052 ASSIST MOTOR
* (Supplied with ORNAMENTAL PLATE ASSY)
REEL MOTOR BOARD

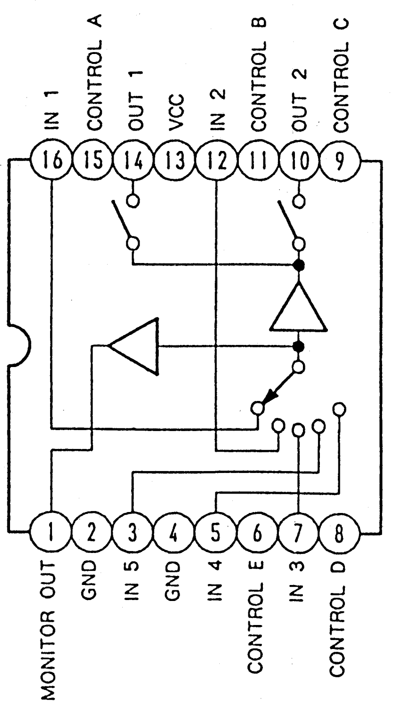

21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
MAIN (B) BOARD (3/3)
RV301 20K (15A)
REC LEVEL
CNP301 PH3P
CNP302 PH3P
CNP303 PH6P
IC701
M50747-883SP
MECHANISM CONTROL
IC702
DOLBY ON
CN701
AUGND
PB-L
+7.5V
PB-R
-7.5V
REC-L
SYSGND
REC-R
5.6V
5V
MGND
RST
AUB
+7V
-7V
TO POWER BOARD
Ⓐ CN401
METAL Other:0
NORMAL:0
C750 22000P
R707 22K
X701 4MHz
X702 4MHz
R724 22K
Q706 2SC3399
SIRCS BUFFER
C752 22000P
C753 22000P
CNP703
D722 10E2N
D721 10E2N
D720 10E2N
L802 100μH
L803 100μH
C803 10/50
D802
D803
D804
D805 10E2N×4
C802 0.018/100V (PP)
R802 15K
L801 680μH
T801
Q801 2SD774
Q802 2SD774
R801 15K
C801 10/50
D801 RD5.6ES
DC-DC CONVERTER
CP702 4.7K×8
CP701 4.7K×8
R780 22K
R705 4.7K
R704 4.7K
R703 4.7K
CN702-1
VG
+5V
GND
VF
VF
KEY1
Ⓑ
TO PANEL BOARD CN601
IC705
MC14069UBF
SHAPER WAVEFORM
MAIN (C) BOARD
Q708 2SA1348
DET
SAFLED
R601 270
D753 1N4148M
D601 SEL2210S
S601
AUTO REC LEVEL
R602 680
D750 UZL7M2
D751 UZL7M2
C754 22000P
CNP702 DA5P
CN602 DA5P
D752 1N4148M
MAIN (B) BOARD (2/3)
IC706
BA6219
VOL MOTOR DRIVER
Q709 2SA1348
LED DRIVER
Q715 2SC3402
VOL SPEED SELECT
VOLUME MOTOR
(INCLUDED RV301)
C708 0.1
C707 0.1
C709 0.1
R743 270
(INCLUDED IN RV301)
C LEVEL
C720 0.1
R742 8K
R741 680
R740 10K
R739 10K
R738 10K
R722 4.7K
R721 4.7K
D712 UZL7H2
D710 UZL7H2
D711 UZL7H2
IC703
BA6219
REEL MOTOR DRIVER
Q701 2SC3402
Q702 2SC3402
REEL MOTOR TORQUE SWITCH
R708 330
R709 910
R710 1.2K
R711 1K
R712 4.7 (1/2FR)
D705 UZL7H2
D706 10K
D707 UZL7H2
D708 UZL7H2
D709 UZL7H2
C702 0.1
R701 10K
R702 10K
IC704
LB1641
ASSIST MOTOR DRIVER
Q703 2SC3402
ASSIST MOTOR TORQUE SWITCH
R713 2.2K
R714 1.5K
R715 1K
R716 4.7 (1/2FR)
C703 0.1
R748 10K
R749 10K
D703 UZL7H2
D704 UZL7H2
R720 220K
R718 39K
R719 220K
R717 39K
(0.5~4.1)
(0.3~4.1)
-7V
+5V
CN703
CN1051
CN704
CN1001
CN705
CN1002
DA
DR
GND
REEL MOTOR BOARD
M1053 CAPSTAN MOTOR
D1051
M1051 REEL MOTOR
M1052 ASSIST MOTOR
R1051 560
C1052 10/50V
C1051 10/50V
C1053 0.1
S1005 FWD TAB
S1002 DOOR
S1003 CLOSE
S1004 OPEN
S1001 ROTALY ENCORDER
MD BOARD
R1001 180
R1002 180
IC1001 SUPPLY REEL
IC1002 TAKE UP REEL
REV TAB S1009
70μS S1008
METAL S1007
HALF S1006
* (Supplied with ORNAMENTAL PLATE ASSY)

- **IC BLOCK DIAGRAM**

IC501 LA5603


Cd
RES
Vcc
Vo 2
Cn 2
GND
Cn 3
Vo 3
VEE
ERROR AMP
V REF.
C. LIM.
THERMAL PRL.
ON・OFF
RES. GEN.
VCC
60K
100
30K
≈140 μ A
≈2.4V
Vo 1
Cn 1
V quick
V mute
EN
EN delay
CnA
VoA1
VoA2

IC407 BA7625


IN 1
CONTROL A
OUT 1
VCC
IN 2
CONTROL B
OUT 2
CONTROL C
MONITOR OUT
GND
IN 5
GND
IN 4
CONTROL E
IN 3
CONTROL D

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$W or less unless otherwise specified.
- ⏦ : fusible resistor.

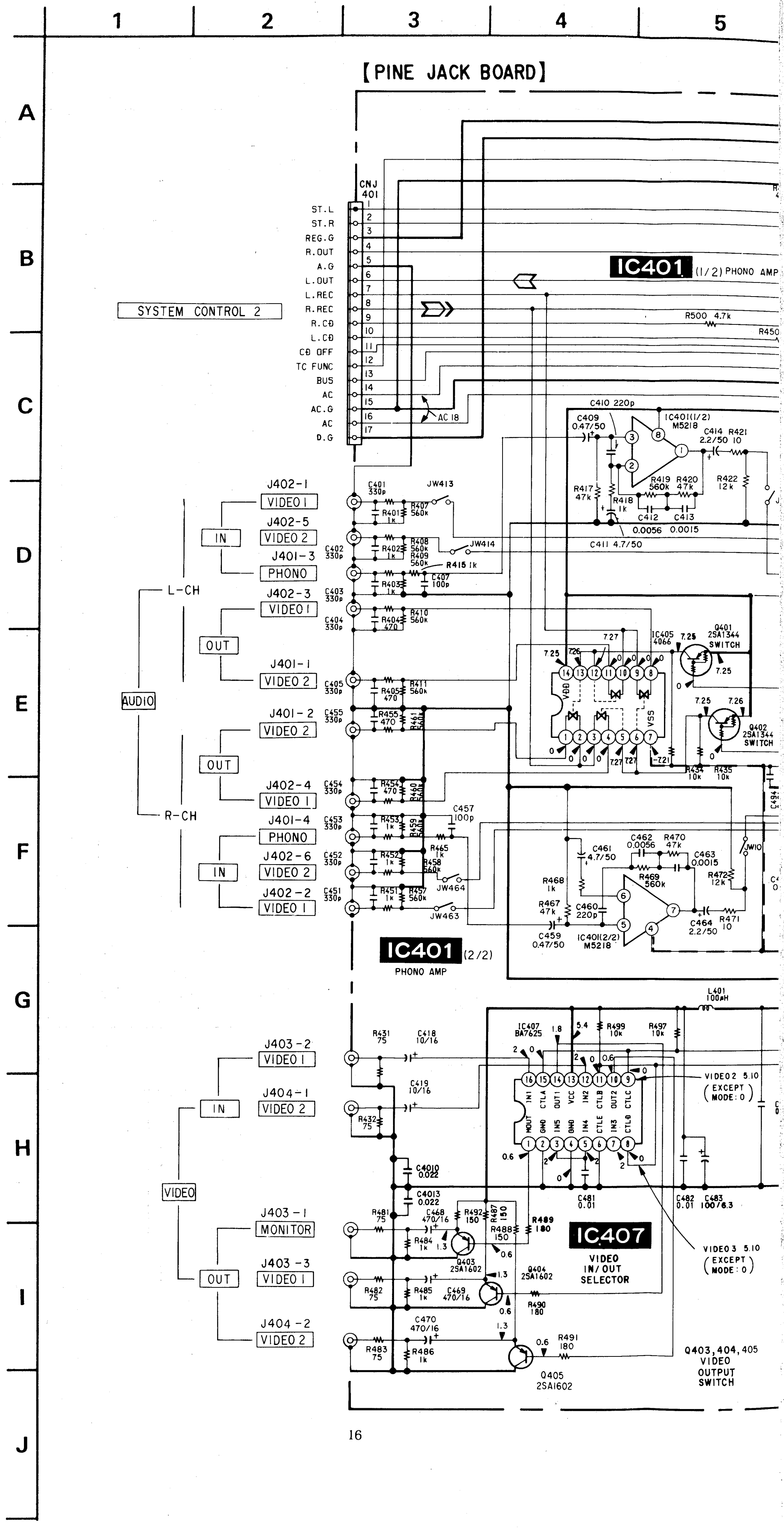
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line
- ╍ : B– Line
- ☐ : adjustment for repair.

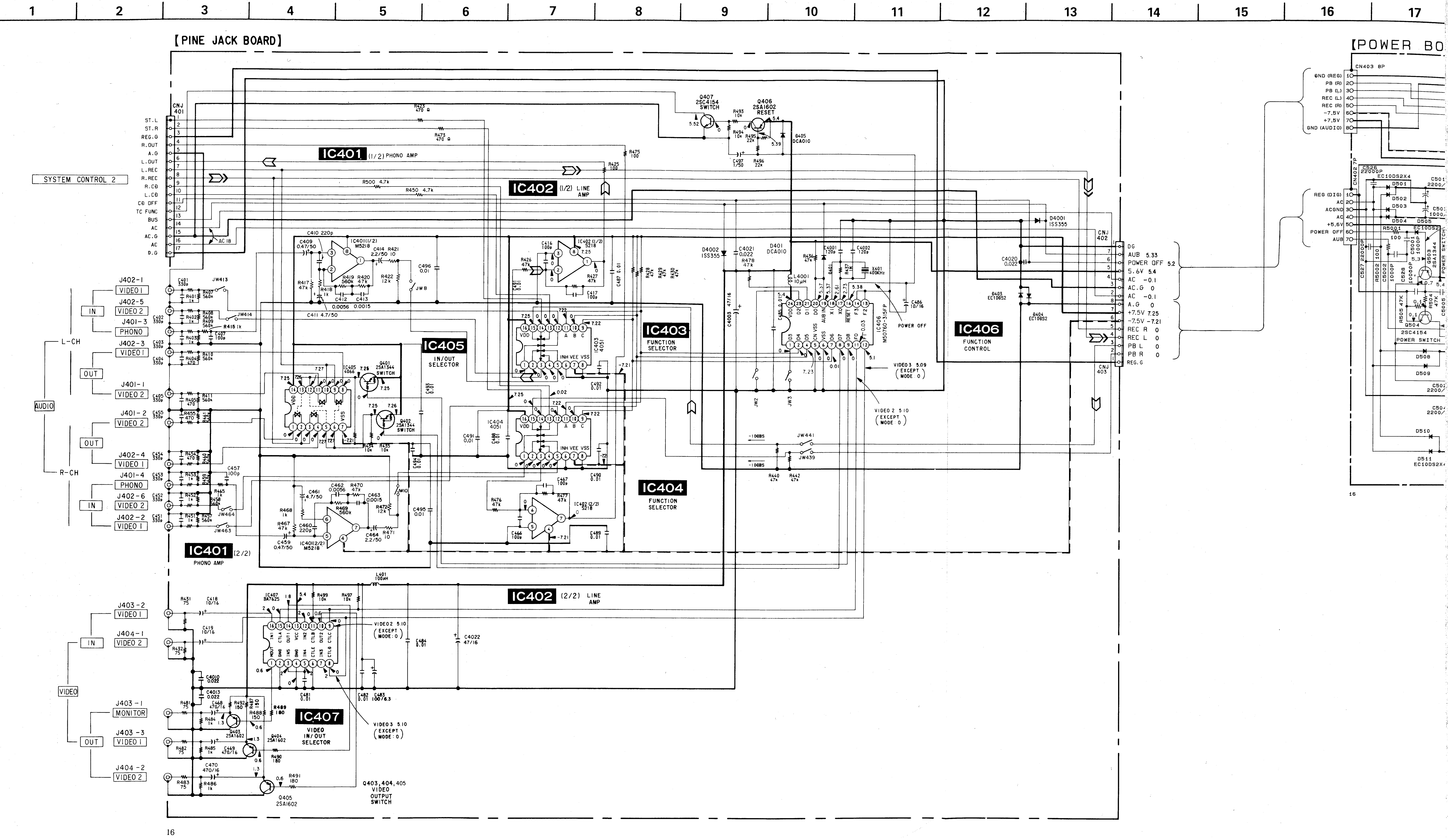
no mark: STOP
( ): PB
< >: REC

- Voltages are taken with a VOM (50 kΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
ᐳ : PB
ᐳᐳ : REC

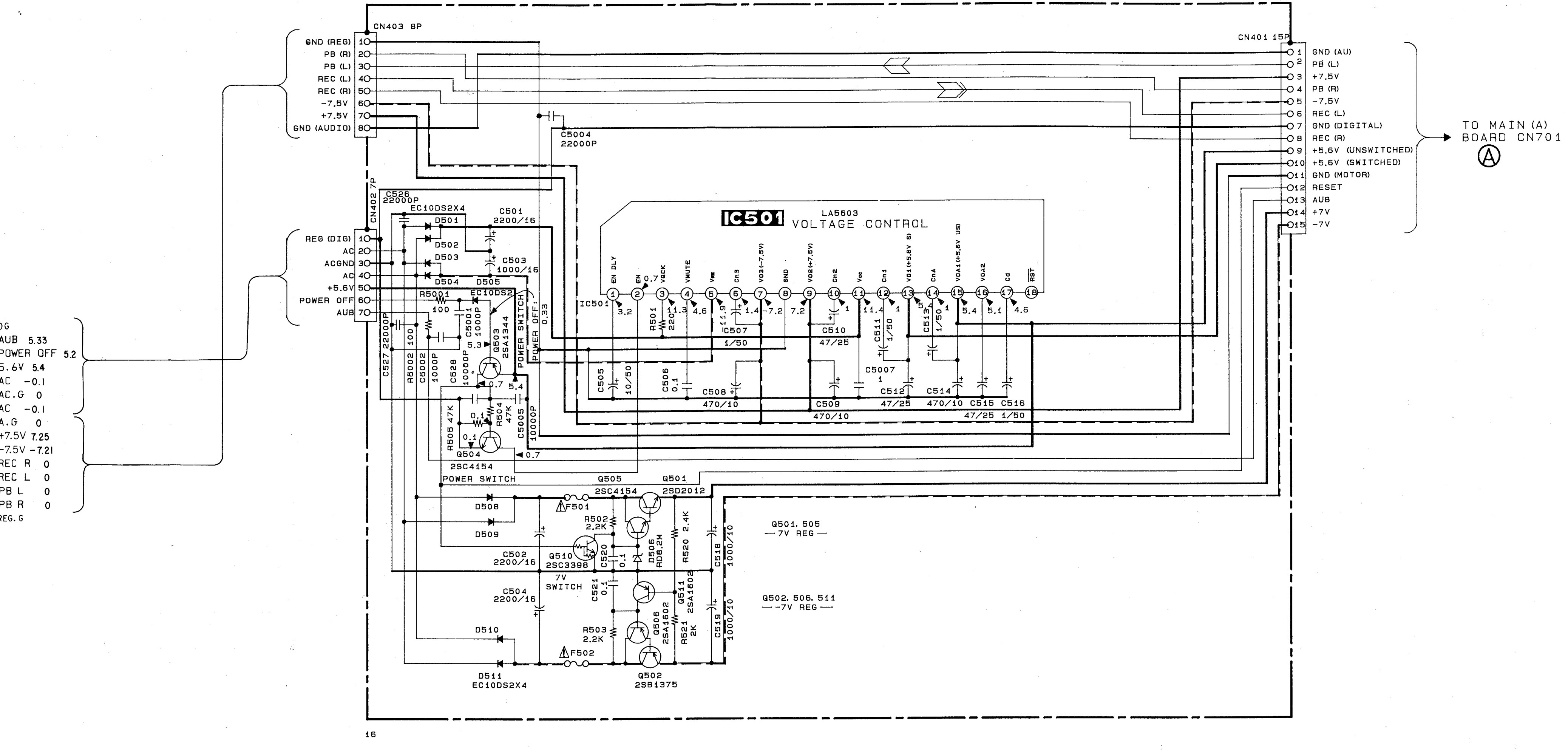
5-7. SCHEMATIC DIAGRAM – PIN JACK SECTION –


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
[PINE JACK BOARD]
CNJ 401
ST.L
ST.R
REG.G
R.OUT
A.G
L.OUT
L.REC
R.REC
R.CO
L.CO
CO OFF
TC FUNC
BUS
AC
AC.G
AC
D.G
SYSTEM CONTROL 2
IC401 (1/2) PHONO AMP
IC401 (2/2) PHONO AMP
IC407 VIDEO IN/OUT SELECTOR
IC405 4066
AUDIO
VIDEO
L-CH
R-CH
IN
OUT
J402-1 VIDEO I
J402-5 VIDEO 2
J401-3 PHONO
J402-3 VIDEO I
J401-1 VIDEO 2
J401-2 VIDEO 2
J402-4 VIDEO I
J401-4 PHONO
J402-6 VIDEO 2
J402-2 VIDEO I
J403-2 VIDEO I
J404-1 VIDEO 2
J403-1 MONITOR
J403-3 VIDEO I
J404-2 VIDEO 2
Q401 2SA1344 SWITCH
Q402 2SA1344 SWITCH
Q403 2SA1602
Q404 2SA1602
Q405 2SA1602
Q403,404,405 VIDEO OUTPUT SWITCH
VIDEO2 5.10 (EXCEPT MODE: 0)
VIDEO3 5.10 (EXCEPT MODE: 0)
L401 100μH
R500 4.7k
JW413
JW414
JW463
JW464
16

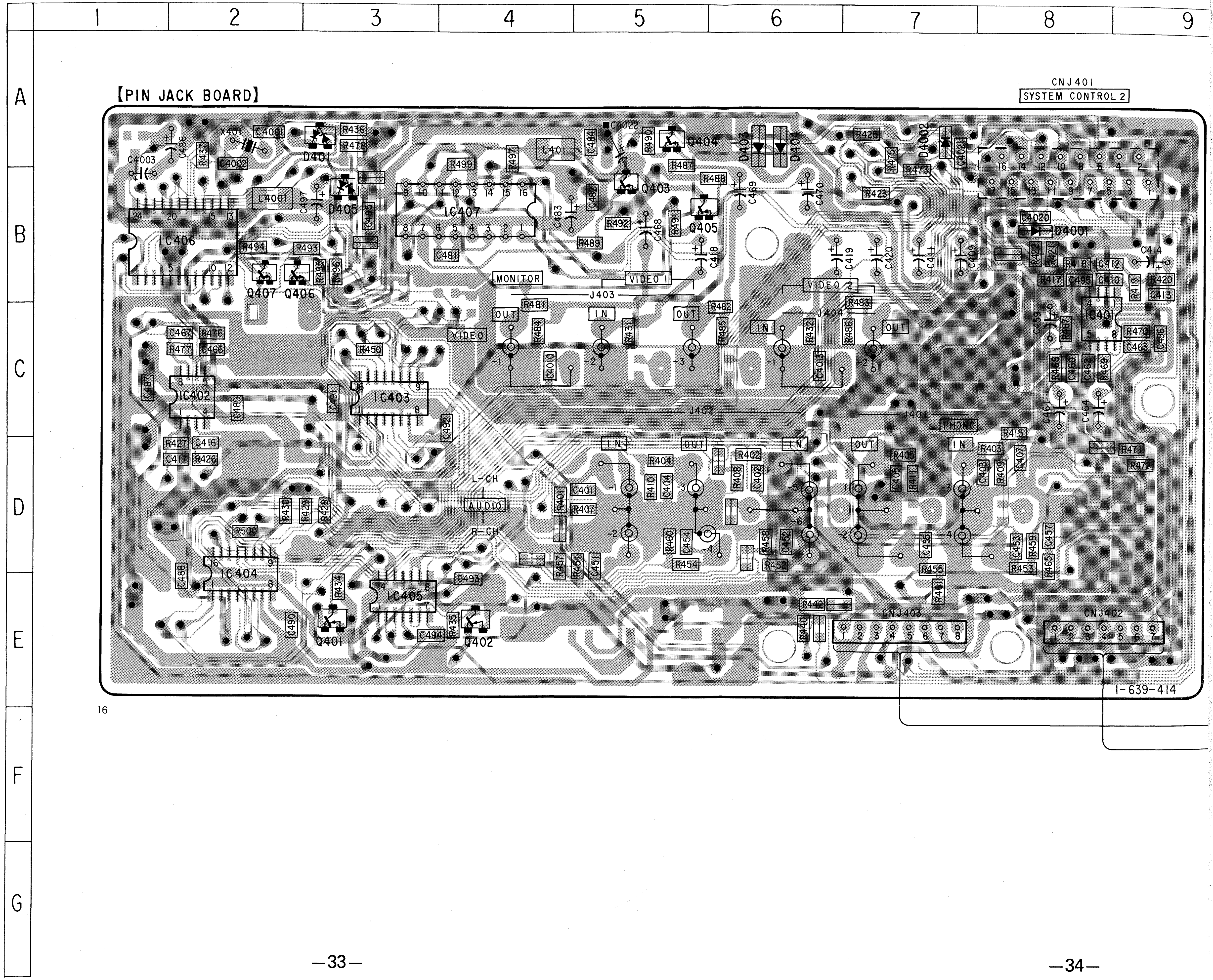
-7. SCHEMATIC DIAGRAM – PIN JACK SECTION –

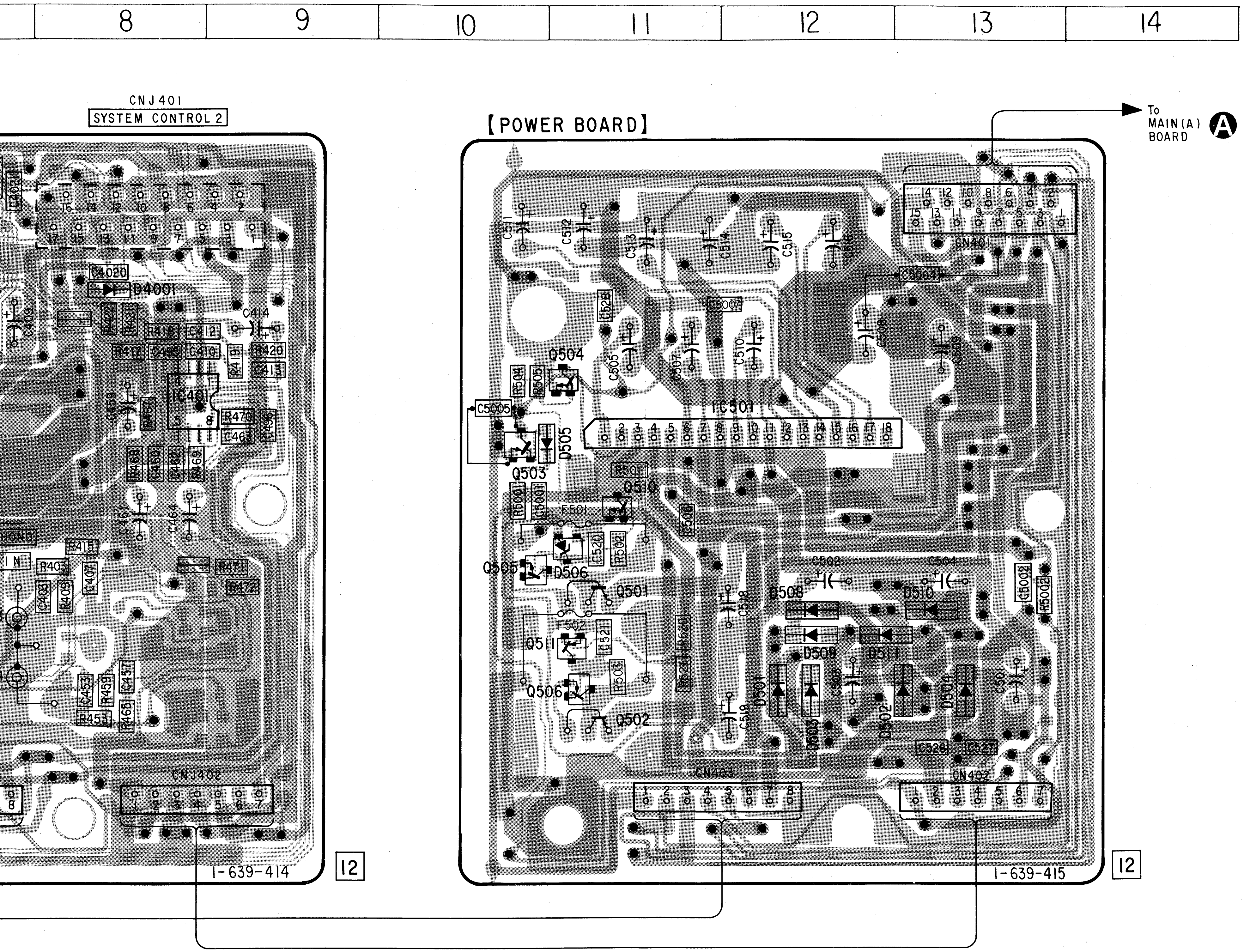

[PINE JACK BOARD]
[POWER BO
SYSTEM CONTROL 2
AUDIO
L-CH
R-CH
VIDEO
IN
OUT
CNJ 401
ST.L
ST.R
REG.G
R.OUT
A.G
L.OUT
L.REC
R.REC
R.CD
L.CD
CD OFF
TC FUNC
BUS
AC
AC.G
AC
D.G
J402-1 VIDEO 1
J402-5 VIDEO 2
J401-3 PHONO
J402-3 VIDEO 1
J401-1 VIDEO 2
J401-2 VIDEO 2
J402-4 VIDEO 1
J401-4 PHONO
J402-6 VIDEO 2
J402-2 VIDEO 1
J403-2 VIDEO 1
J404-1 VIDEO 2
J403-1 MONITOR
J403-3 VIDEO 1
J404-2 VIDEO 2
IC401 (1/2) PHONO AMP
IC401 (2/2) PHONO AMP
IC402 (1/2) LINE AMP
IC402 (2/2) LINE AMP
IC403 FUNCTION SELECTOR
IC404 FUNCTION SELECTOR
IC405 IN/OUT SELECTOR
IC406 FUNCTION CONTROL
IC406 M50760-315FP
IC407 VIDEO IN/OUT SELECTOR
IC407 BA7625
Q401 2SA1344 SWITCH
Q402 2SA1344 SWITCH
Q403 2SA1602
Q404 2SA1602
Q405 2SA1602
Q403,404,405 VIDEO OUTPUT SWITCH
Q406 2SA1602 RESET
Q407 2SC4154 SWITCH
D4001 1SS355
D4002 1SS355
D401 DCA010
D405 DCA010
D403 EC10GS2
D404 EC10GS2
X401 400KHz
L4001 10μH
L401 100μH
VIDEO3 5.09 (EXCEPT MODE 0)
VIDEO2 5.10 (EXCEPT MODE 0)
VIDEO3 5.10 (EXCEPT MODE: 0)
VIDEO2 5.10 (EXCEPT MODE: 0)
POWER OFF
CNJ 402
CNJ 403
DG
AUB 5.33
POWER OFF 5.2
5.6V 5.4
AC -0.1
AC.G 0
AC -0.1
A.G 0
+7.5V 7.25
-7.5V -7.21
REC R 0
REC L 0
PB L 0
PB R 0
REG.G
CN403 8P
GND (REG)
PB (R)
PB (L)
REC (L)
REC (R)
-7.5V
+7.5V
GND (AUDIO)
CN402 7P
REG (DIG)
AC
ACGND
AC
+5.6V
POWER OFF
AUB
Q504 2SC4154 POWER SWITCH
Q503 2SA1344
EC10DS2X4
16

【POWER BOARD】


DG
AUB 5.33
POWER OFF 5.2
5.6V 5.4
AC -0.1
AC.G 0
AC -0.1
A.G 0
+7.5V 7.25
-7.5V -7.21
REC R 0
REC L 0
PB L 0
PB R 0
REG.G
CN403 8P
GND (REG) 1
PB (R) 2
PB (L) 3
REC (L) 4
REC (R) 5
-7.5V 6
+7.5V 7
GND (AUDIO) 8
C5004 22000P
CN402 7P
REG (DIG) 1
AC 2
ACGND 3
AC 4
+5.6V 5
POWER OFF 6
AUB 7
C526 22000P
EC10DS2X4
D501
D502
D503
D504
D505
C501 2200/16
C503 1000/16
R5001 100
EC10DS2
C5001 1000P
5.3
Q503 2SA1344
POWER SWITCH
POWER OFF: 0.33
C527 22000P
R5002 100
C5002 1000P
C528 10000P
0.7
5.4
R505 47K
0.1
R504 47K
C5005 10000P
0.1
Q504 2SC4154
0.7
POWER SWITCH
IC501
LA5603
VOLTAGE CONTROL
EN DLY
EN
VQCK
VMUTE
Vcc
Cn3
VO3(-7.5V)
GND
VO2(+7.5V)
Cn2
Vcc
Cn1
VO1(+5.6V S)
CnA
VOA1(+5.6V US)
VOA2
Cd
RST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
3.2
0.7
11.3
4.6
11.9
1.4
-7.2
7.2
1
11.4
1
5.4
1
5.4
5.1
4.6
R501 220
C505 10/50
C506 0.1
C507 1/50
C508 470/10
C509 470/10
C510 47/25
C511 1/50
C5007 1
C512 47/25
C513 1/50
C514 470/10
C515 47/25
C516 1/50
Q505 2SC4154
Q501 2SD2012
F501
D508
D509
R502 2.2K
Q510 2SC3398
7V SWITCH
C520 0.1
D506 RD8.2M
R520 2.4K
C518 1000/10
C502 2200/16
C504 2200/16
C521 0.1
Q511 2SA1602
Q506 2SA1602
R521 2K
C519 1000/10
R503 2.2K
F502
D510
D511 EC10DS2X4
Q502 2SB1375
Q501, 505 —7V REG—
Q502, 506, 511 —-7V REG—
CN401 15P
1 GND (AU)
2 PB (L)
3 +7.5V
4 PB (R)
5 -7.5V
6 REC (L)
7 GND (DIGITAL)
8 REC (R)
9 +5.6V (UNSWITCHED)
10 +5.6V (SWITCHED)
11 GND (MOTOR)
12 RESET
13 AUB
14 +7V
15 -7V
TO MAIN (A) BOARD CN701
Ⓐ
16

5-8. PRINTED WIRING BOARDS – PIN JACK SECTION –


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
【PIN JACK BOARD】
CNJ401
SYSTEM CONTROL 2
IC406
IC407
IC402
IC403
IC404
IC405
IC401
Q401
Q402
Q403
Q404
Q405
Q406
Q407
D401
D403
D404
D405
D4001
D4002
X401
L401
L4001
MONITOR
VIDEO 1
VIDEO 2
VIDEO
J401
J402
J403
J404
IN
OUT
PHONO
AUDIO
L-CH
R-CH
CNJ403
CNJ402
1-639-414
16


8
9
10
11
12
13
14
CNJ401
SYSTEM CONTROL 2
【POWER BOARD】
To MAIN(A) BOARD
A
CN401
IC401
IC501
D4001
C4020
Q501
Q502
Q503
Q504
Q505
Q506
Q510
Q511
D501
D502
D503
D504
D505
D506
D508
D509
D510
D511
F501
F502
CNJ402
CN403
CN402
PHONO
IN
1-639-414
1-639-415
12

• Semiconductor Location

Ref. No.	Location
D401	A-3
D403	A-6
D404	A-6
D405	B-3
D501	D-12
D502	D-13
D503	D-12
D504	D-13
D505	C-11
D506	C-11
D508	D-12
D509	D-12
D510	D-13
D511	D-12
D4001	B-8
D4002	A-7
IC401	C-8
IC402	C-2
IC403	C-3
IC404	E-2
IC405	E-3
IC406	B-2
IC407	B-4
IC501	C-12
Q401	E-3
Q402	E-4
Q403	B-5
Q404	A-5
Q405	B-5
Q406	B-2
Q407	B-2
Q501	D-11
Q502	D-11
Q503	C-10
Q504	B-11
Q505	D-10
Q506	D-11
Q510	C-11
Q511	D-11

Note on Mounting Diagram:

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

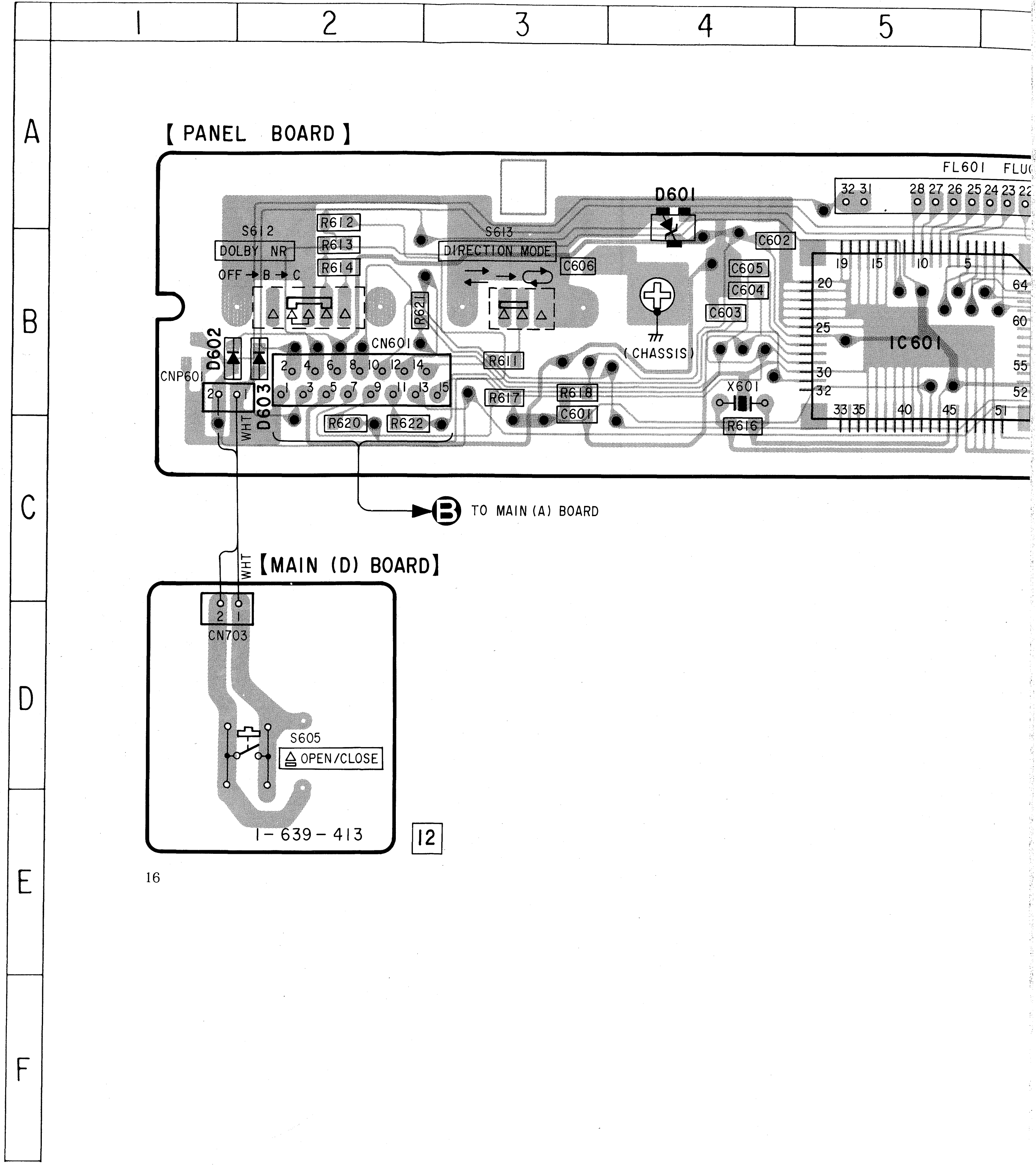
• Semiconductor Location

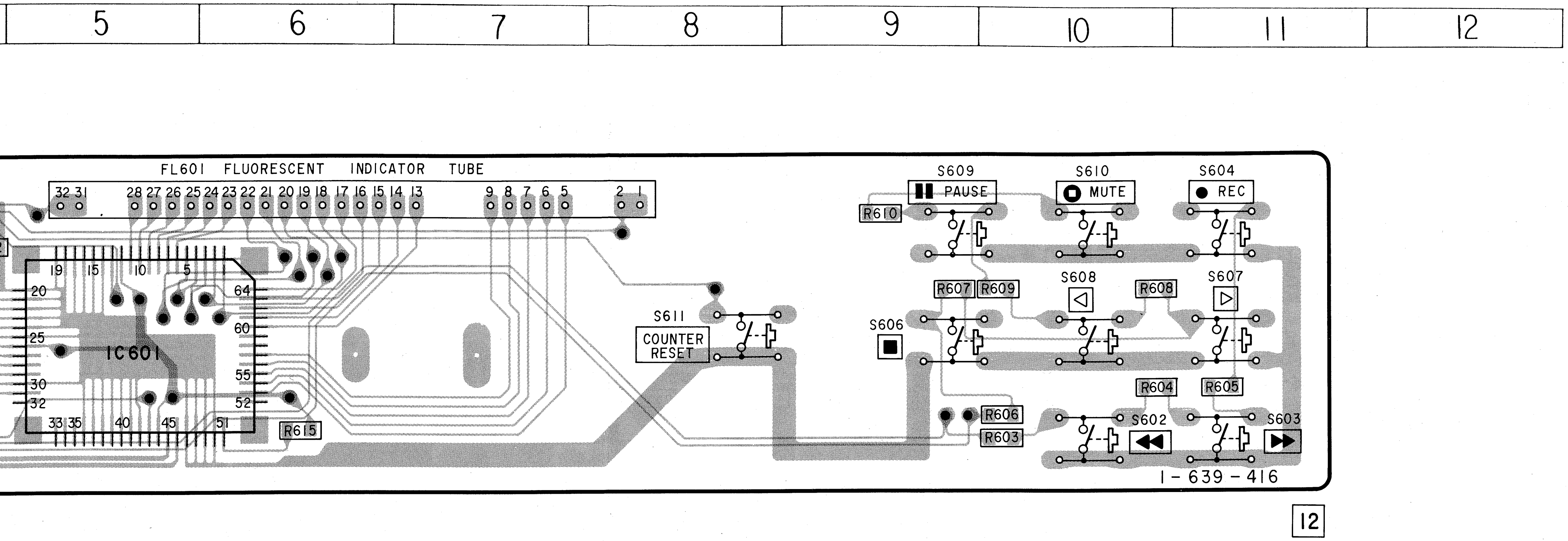
Ref. No.	Location
D601	A-4
D602	B-1
D603	B-2
IC601	B-5

Note on Mounting Diagram:

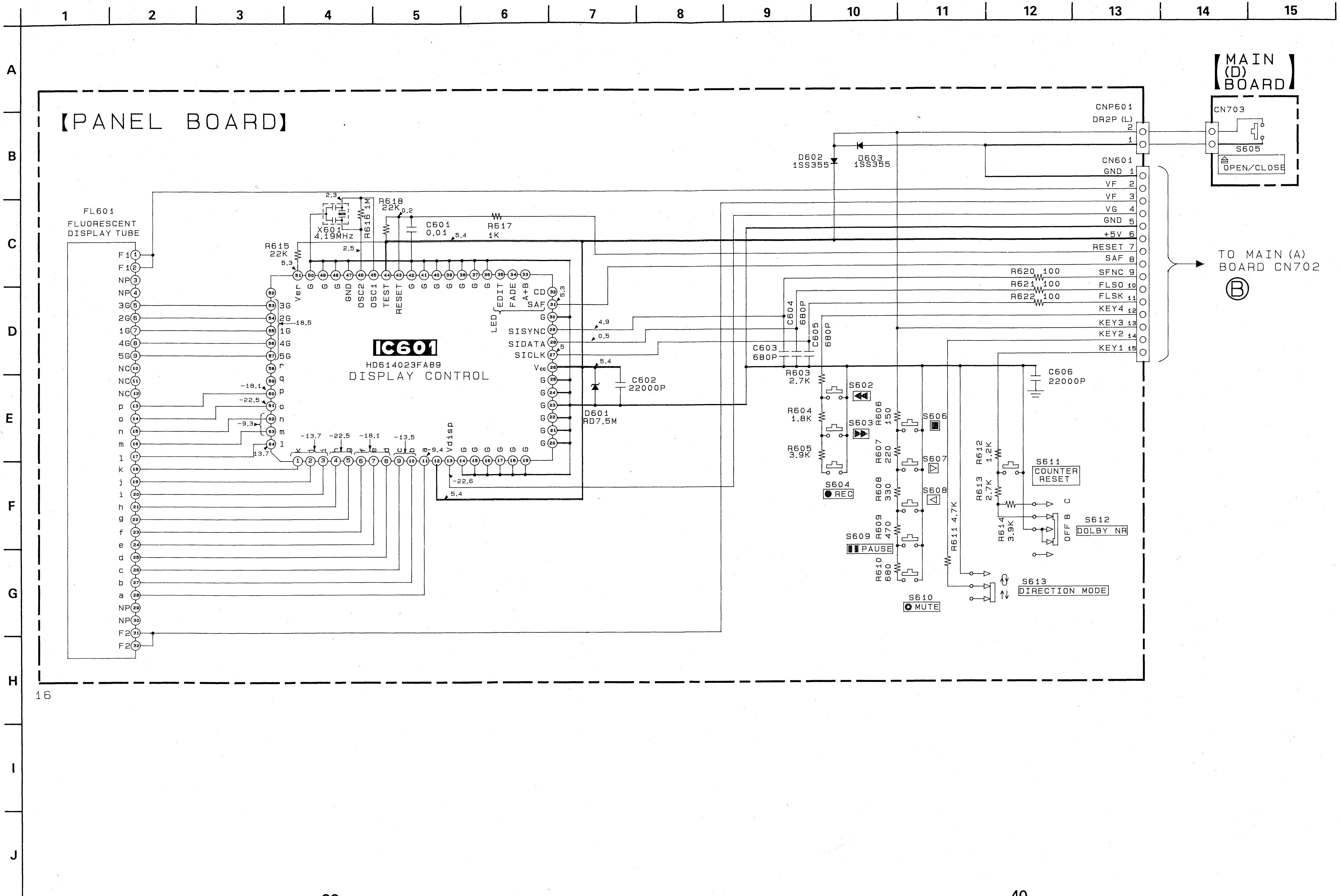
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

5-9. PRINTED WIRING BOARDS – PANEL SECTION –


1
2
3
4
5
A
B
C
D
E
F
[PANEL BOARD]
FL601
D601
32 31
28 27 26 25 24 23
S612
DOLBY NR
OFF → B → C
R612
R613
R614
S613
DIRECTION MODE
C606
C602
C605
C604
C603
R621
(CHASSIS)
IC601
19 15 10 5
20
25
30
32
33 35 40 45 51
64
60
55
52
D602
D603
CNP601
CN601
2 4 6 8 10 12 14
1 3 5 7 9 11 13 15
R611
R617
R618
C601
X601
R616
R620
R622
WHT
B TO MAIN (A) BOARD
[MAIN (D) BOARD]
CN703
S605
OPEN/CLOSE
1-639-413
12
16


5
6
7
8
9
10
11
12
FL601 FLUORESCENT INDICATOR TUBE
32 31 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 9 8 7 6 5 2 1
IC601
19 15 10 5 1
20
25
30
32
33 35 40 45 51
64
60
55
52
R615
S611
COUNTER RESET
S609
PAUSE
S610
MUTE
S604
● REC
R610
R607
R609
S608
R608
S607
S606
R604
R605
R606
R603
S602
S603
1-639-416
12

5-10. SCHEMATIC DIAGRAM – PANEL SECTION – • See page 28 for Note on Schematic Diagram.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J
【PANEL BOARD】
【MAIN (D) BOARD】
CN703
S605
OPEN/CLOSE
CNP601
DR2P (L)
CN601
GND 1
VF 2
VF 3
VG 4
GND 5
+5V 6
RESET 7
SAF 8
SFNC 9
FLSO 10
FLSK 11
KEY4 12
KEY3 13
KEY2 14
KEY1 15
TO MAIN (A) BOARD CN702
Ⓑ
D602 1SS355
D603 1SS355
FL601 FLUORESCENT DISPLAY TUBE
F1 F1 NP NP 3G 2G 1G 4G 5G NC NC NC p o n m l k j i h g f e d c b a NP NP F2 F2
X601 4.19MHz
R616 1M
R618 22K
R615 22K
C601 0.01
R617 1K
IC601
HD614023FA89
DISPLAY CONTROL
Ver GND OSC2 OSC1 TEST RESET
EDIT FADE A+B CD SAF
LED
SISYNC SIDATA SICLK Vcc
Vdisp
C602 22000P
D601 RD7.5M
R620 100
R621 100
R622 100
C604 680P
C605 680P
C603 680P
R603 2.7K
R604 1.8K
R605 3.9K
S602
S603
S604 ● REC
R606 150
R607 220
R608 330
R609 470
R610 680
S606
S607
S608
S609 ▮▮ PAUSE
S610 ● MUTE
R611 4.7K
R612 1.2K
R613 2.7K
R614 3.9K
C606 22000P
S611 COUNTER RESET
S612 DOLBY NR
OFF B C
S613 DIRECTION MODE
2.3 0.2 5.4 2.5 5.3 18.5 -18.1 -22.5 -9.3 13.7 -13.7 -22.5 -18.1 -13.5 -9.4 -22.6 5.4 5.3 4.9 0.5 5 5.4
16

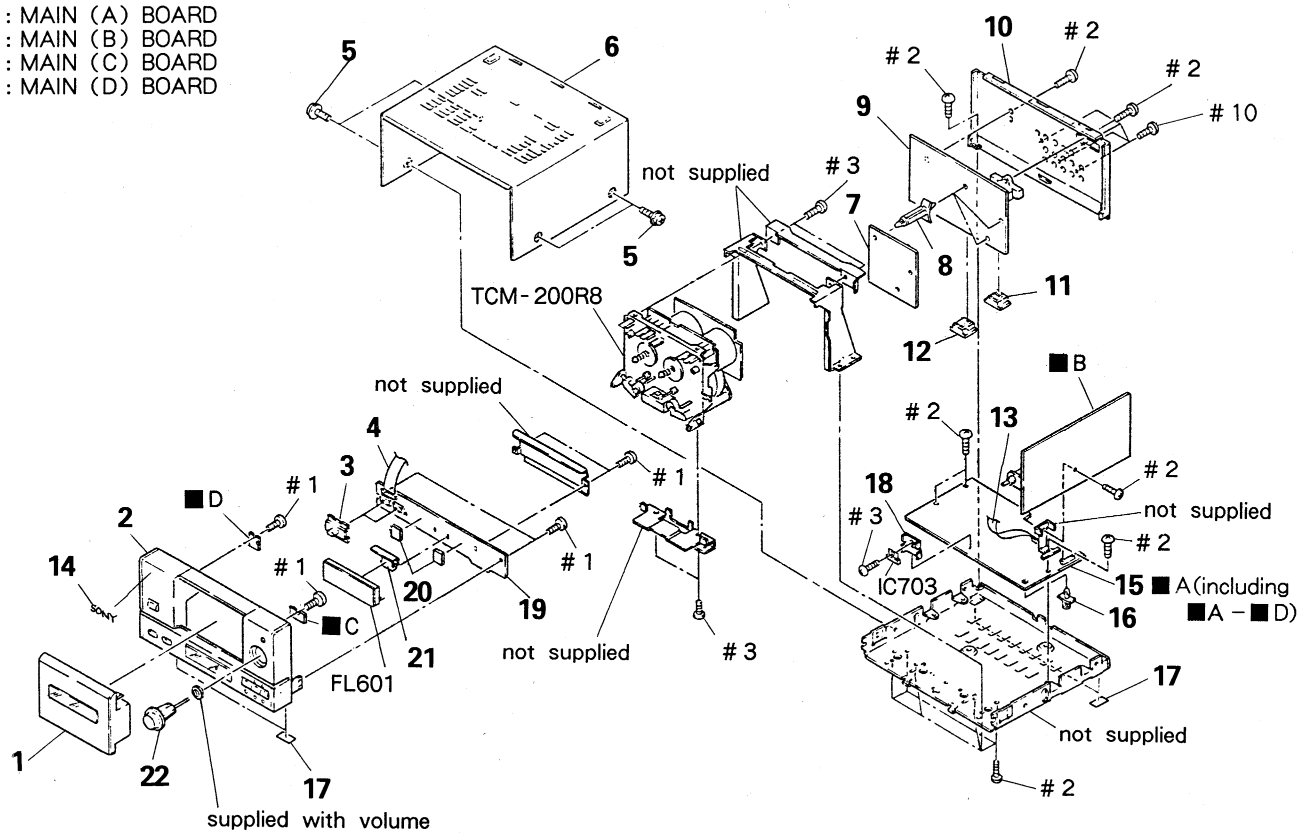
SECTION 6
EXPLODED VIEWS

NOTE :

- – XX, – X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

6-1. FRONT PANEL SECTION

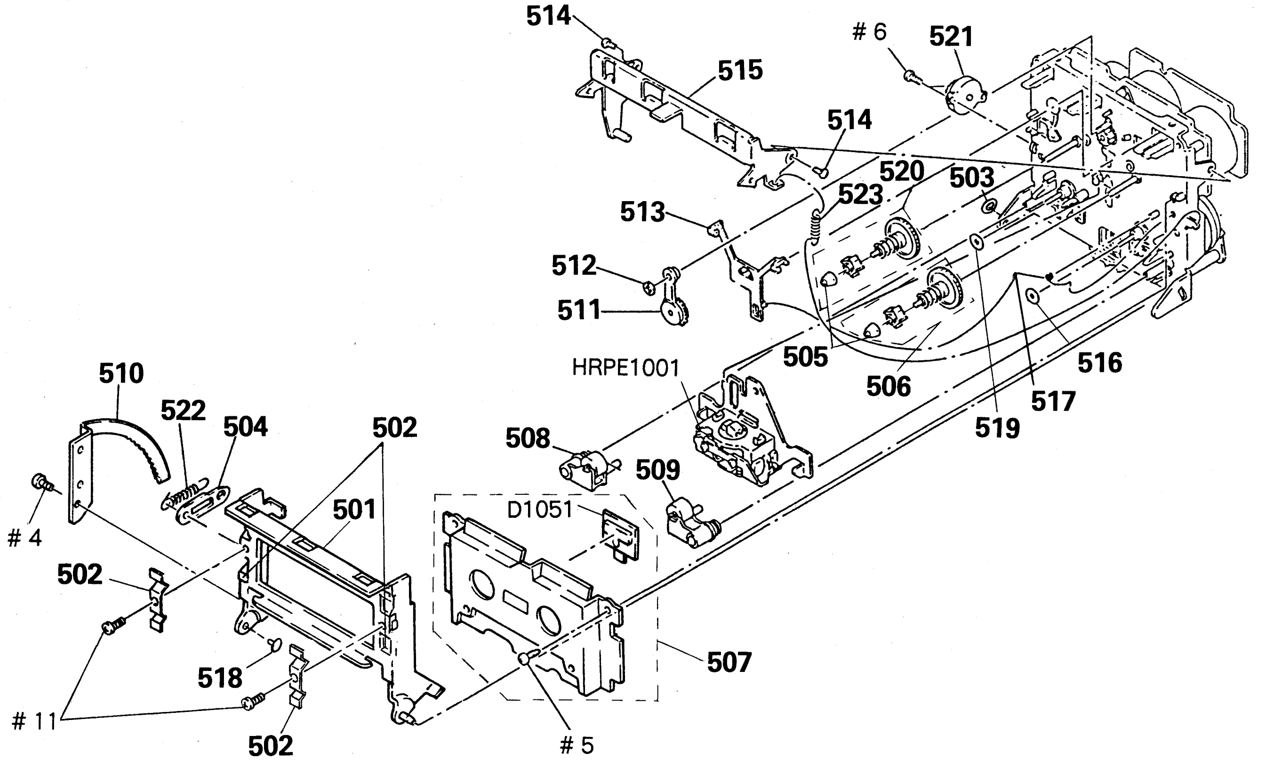
■A : MAIN (A) BOARD
■B : MAIN (B) BOARD
■C : MAIN (C) BOARD
■D : MAIN (D) BOARD


5
6
10
# 2
# 2
# 2
# 10
9
not supplied
# 3
7
5
8
11
TCM-200R8
12
■B
not supplied
4
# 2
13
3
# 1
■D
# 1
2
18
# 2
# 3
not supplied
# 2
14
# 1
# 1
20
19
IC703
15 ■A(including ■A – ■D)
16
■C
21
FL601
not supplied
# 3
17
not supplied
1
22
17
supplied with volume
# 2

Ref. No.	Part No.	Description	Remarks
1	A-2003-769-A	LID ASSY, CASSETTE	
2	A-2003-768-A	PANEL ASSY, FRONT	
3	3-368-105-01	KNOB (SLIDE)	
4	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
5	3-363-099-01	SCREW (CASE +3X8 TP2)	
6	4-932-841-01	CASE	
7	* 1-639-415-11	POWER BOARD	
8	* 3-703-353-02	SUPPORT, PC BOARD	
9	* A-2006-548-A	PIN JACK BOARD, COMPLETE	
10	* 3-367-074-01	PANEL, BACK	
11	* 1-573-188-11	CONNECTOR, BRIDGE 7P	
12	* 1-573-389-11	COONECTOR, BRIDGE 8P	

Ref. No.	Part No.	Description	Remarks
13	1-575-664-11	WIRE, FLAT TYPE (15 CORE)	
14	4-942-636-01	EMBLEM (NO. 3. 5), SONY	
15	* A-2006-452-A	MAIN BOARD, COMPLETE	
16	* 3-350-847-31	HOLDER, PCB	
17	4-930-336-01	FOOT (FELT)	
18	* 3-356-925-01	HEAT SINK	
19	* A-2006-453-A	PANEL BOARD, COMPLETE	
20	* 4-921-941-01	CUSHION (FL)	
21	* 3-368-109-01	HOLDER, FL TUBE	
22	A-2003-767-A	KNOB (REC VOL) ASSY	
FL601	1-519-656-11	INDICATOR TUBE, FLUORESCENT	
IC703	8-759-973-95	IC BA6219B	

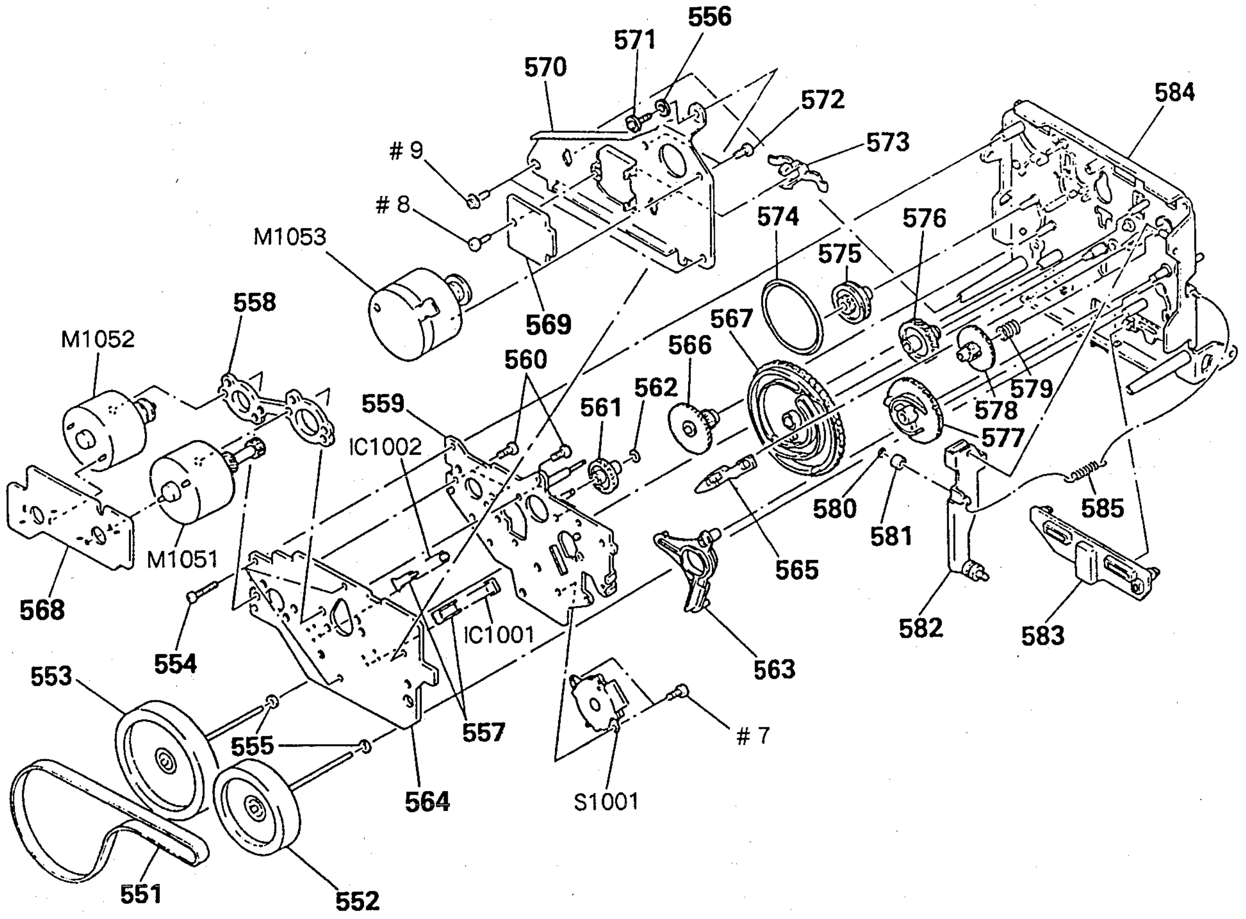
6-2. MECHANISM SECTION-1 (TCM-200R8)


514
# 6
521
515
514
520
503
523
513
512
511
HRPE1001
505
506
516
517
519
510
522
504
502
508
509
D1051
501
# 4
502
507
518
# 11
502
# 5

Ref. No.	Part No.	Description	Remarks
501	X-3362-956-1	HOLDER ASSY, CASSETTE	
502	3-354-908-01	SPRING (CASSETTE RETAINER)	
503	3-558-708-21	WASHER, STOPPER	
504	* 3-356-717-01	LEVER (JOINT)	
505	3-362-308-01	CAP (REEL)	
506	X-3356-627-1	GEAR (T) ASSY	
507	X-3356-613-1	PLATE ASSY, ORNAMENTAL	
508	X-3343-455-1	LEVER (PINCH F) ASSY	
509	X-3343-456-1	LEVER (PINCH R) ASSY	
510	X-3362-957-1	GEAR ASSY, LOADING	
511	X-3356-641-1	LEVER (FR2) ASSY	
512	3-669-465-11	WASHER (1.5), STOPPER	
513	3-356-614-01	SLIDER (BRAKE)	

Ref. No.	Part No.	Description	Remarks
514	3-356-601-11	SCREW, STEP	
515	* X-3356-608-1	LEVER (LIFTER) ASSY	
516	3-356-713-01	WASHER	
517	3-356-619-01	SPRING (B), TORSION	
518	3-356-710-01	SHAFT (LEFT) (CASSETTE HOLDER)	
519	3-356-714-01	WASHER	
520	X-3356-628-1	GEAR (S) ASSY	
521	3-712-786-01	DAMPER, OIL	
522	3-356-626-01	SPRING, TENSION	
523	3-356-625-01	SPRING, TENSION	
D1051	8-719-980-85	DIODE SLF-325C	
HRPE1001	A-2003-772-A	BASE ASSY, HEAD	

6-3. MECHANISM SECTION-2
(TCM-200R8)


556
571
570
572
573
584
# 9
# 8
M1053
574
576
575
558
569
567
M1052
566
560
562
579
559
561
578
IC1002
577
580
585
581
M1051
565
568
582
583
IC1001
554
563
553
557
555
# 7
564
S1001
551
552

Ref. No.	Part No.	Description	Remarks
551	3-356-730-01	BELT (CAPSTAN R2)	
552	X-3356-642-1	FLYWHEEL (R FWD) ASSY	
553	X-3356-643-1	FLYWHEEL (R REV) ASSY	
554	3-355-801-01	SCREW (BTP 2X18)	
555	3-356-705-01	WASHER (CAPSTAN)	
556	* 3-356-718-01	SPACER (THRUST RETAINER R)	
557	3-356-631-01	HOLDER (SENSOR)	
558	* 3-356-628-01	SPACER (MOTOR)	
559	* X-3356-602-4	BRACKET (MOTOR R) ASSY	
560	3-363-804-01	SCREW (+P 2.6X6.5)	
561	3-356-702-01	GEAR (COMMUNICATION B)	
562	3-669-465-00	WASHER (1.5), STOPPER	
563	3-356-613-01	LEVER (MODE)	
564	* 1-632-740-11	MD BOARD	
565	3-356-617-01	LEVER (SELECTION)	
566	3-356-606-01	GEAR (MODE)	
567	3-356-615-01	GEAR (MODE CAM RR)	
568	* 1-632-741-11	REEL MOTOR BOARD	
569	* 1-634-323-11	TRANSLATION BOARD	
570	* 3-356-629-01	BRACKET (THRUST RETAINER R)	
571	3-356-707-01	SCREW (+PTPWH 2X25)	
572	4-885-599-00	SCREW, FITTING, REINFORCEMENT	
573	3-575-321-00	RETAINER, THRUST, CAPSTAN	
574	3-356-603-01	BELT (MODE)	
575	3-356-607-01	PULLEY (MODE)	
576	3-356-703-01	GEAR (COMMUNICATION C)	
577	3-356-616-01	GEAR (LOADING CAM)	
578	3-356-609-01	GEAR (LOADING)	
579	3-356-605-01	SPRING, COMPRESSION	
580	3-558-708-11	WASHER, STOPPER	
581	3-356-630-01	ROLLER (LOADING)	
582	* X-3356-606-1	LEVER (LOADING) ASSY	
583	3-356-612-01	SLIDER (REVERSE)	
584	X-3356-634-1	CHASSIS (R2)COMPLETE ASSY,MECH	
585	3-356-624-01	SPRING, TENSION	
IC1001	8-749-920-97	IC PHOTO REFLECTOR GP2S22B	
IC1002	8-749-920-97	IC PHOTO REFLECTOR GP2S22B	
M1051	X-3356-638-1	MOTOR (REEL R) ASSY	
M1052	X-3356-604-1	MOTOR (ASSIST) ASSY	
M1053	X-3356-635-1	MOTOR (CAPSTAN R2) ASSY	
S1001	1-466-525-11	ENCODER, ROTARY	

MAIN

SECTION 7
ELECTRICAL PARTS LIST

NOTE :

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be defferent from the parts specified in the diagrams or the components used on the set.
- −XX, −X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL : metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA... : μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...
- CAPACITORS :
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description				Remarks
	* A-2006-452-A	MAIN BOARD, COMPLETE				
		********************				
	* 1-573-496-11	HOUSING, CONNECTOR 12P				
	* 1-573-497-11	PIN, CONNECTOR (PC BOARD) 12P				
	* 3-356-925-01	HEAT SINK				
	7-682-547-04	SCREW +BVTT 3X6 (S)				
		(CAPACITOR)				
C101	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C102	1-136-157-00	FILM	0.022uF	5%	50V	
C103	1-124-282-00	ELECT	22uF	20%	25V	
C105	1-136-158-00	FILM	0.027uF	5%	50V	
C106	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C107	1-124-907-11	ELECT	10uF	20%	50V	
C108	1-126-233-11	ELECT	22uF	20%	50V	
C109	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C110	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C111	1-136-174-00	FILM	0.56uF	5%	50V	
C112	1-136-171-00	FILM	0.33uF	5%	50V	
C113	1-124-907-11	ELECT	10uF	20%	50V	
C114	1-124-902-00	ELECT	0.47uF	20%	50V	
C115	1-124-927-11	ELECT	4.7uF	20%	100V	
C116	1-124-927-11	ELECT	4.7uF	20%	100V	
C117	1-124-925-11	ELECT	2.2uF	20%	100V	
C118	1-162-285-31	CERAMIC	180PF	10%	50V	
C119	1-136-935-11	FILM	22PF	5%	630V	
C120	1-130-468-00	MYLAR	560PF	5%	50V	
C121	1-136-433-11	FILM	100PF	5%	630V	
C122	1-136-272-00	FILM	68PF	5%	630V	
C123	1-136-153-00	FILM	0.01uF	5%	50V	
C124	1-136-165-00	FILM	0.1uF	5%	50V	
C125	1-136-157-00	FILM	0.022uF	5%	50V	
C201	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C202	1-136-157-00	FILM	0.022uF	5%	50V	
C203	1-124-282-00	ELECT	22uF	20%	25V	
C205	1-136-158-00	FILM	0.027uF	5%	50V	
C206	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C207	1-124-907-11	ELECT	10uF	20%	50V	
C208	1-126-233-11	ELECT	22uF	20%	50V	
C209	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C210	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C211	1-136-174-00	FILM	0.56uF	5%	50V	
C212	1-136-171-00	FILM	0.33uF	5%	50V	
C213	1-124-907-11	ELECT	10uF	20%	50V	
C214	1-124-902-00	ELECT	0.47uF	20%	50V	
C215	1-124-927-11	ELECT	4.7uF	20%	100V	
C216	1-124-927-11	ELECT	4.7uF	20%	100V	
C217	1-124-925-11	ELECT	2.2uF	20%	100V	
C218	1-162-285-31	CERAMIC	180PF	10%	50V	
C219	1-136-935-11	FILM	22PF	5%	630V	
C220	1-130-468-00	MYLAR	560PF	5%	50V	
C221	1-136-433-11	FILM	100PF	5%	630V	
C222	1-136-272-00	FILM	68PF	5%	630V	
C223	1-136-153-00	FILM	0.01uF	5%	50V	
C224	1-136-165-00	FILM	0.1uF	5%	50V	
C225	1-136-157-00	FILM	0.022uF	5%	50V	
C301	1-124-443-00	ELECT	100uF	20%	10V	
C302	1-124-443-00	ELECT	100uF	20%	10V	
C303	1-124-907-11	ELECT	10uF	20%	50V	
C304	1-124-907-11	ELECT	10uF	20%	50V	
C305	1-124-478-11	ELECT	100uF	20%	25V	
C306	1-124-925-11	ELECT	2.2uF	20%	100V	
C307	1-124-902-00	ELECT	0.47uF	20%	50V	
C308	1-162-215-31	CERAMIC	47PF	5%	50V	
C309	1-161-494-00	CERAMIC	0.022uF		25V	
C310	1-162-286-31	CERAMIC	220PF	10%	50V	
C311	1-124-925-11	ELECT	2.2uF	20%	100V	
C312	1-124-477-11	ELECT	47uF	20%	25V	

Ref. No.	Part No.	Description				Remarks
C313	1-124-902-00	ELECT	0.47uF	20%	50V	
C314	1-124-478-11	ELECT	100uF	20%	25V	
C315	1-124-478-11	ELECT	100uF	20%	25V	
C316	1-130-856-00	FILM	0.0068uF	5%	100V	
C317	1-136-230-00	FILM	0.0022uF	5%	100V	
C318	1-136-230-00	FILM	0.0022uF	5%	100V	
C319	1-124-907-11	ELECT	10uF	20%	50V	
C320	1-161-494-00	CERAMIC	0.022uF	5%	25V	
C321	1-136-558-11	FILM	0.0039uF	5%	630V	
C322	1-107-046-00	MICA	4.7PF		500V	
C701	1-124-443-00	ELECT	100uF	20%	10V	
C702	1-164-159-11	CERAMIC	0.1uF		50V	
C703	1-164-159-11	CERAMIC	0.1uF		50V	
C704	1-164-159-11	CERAMIC	0.1uF		50V	
C705	1-124-443-00	ELECT	100uF	20%	10V	
C706	1-124-925-11	ELECT	2.2uF	20%	100V	
C707	1-164-159-11	CERAMIC	0.1uF		50V	
C708	1-136-165-00	FILM	0.1uF	5%	50V	
C709	1-136-165-00	FILM	0.1uF	5%	50V	
C720	1-164-159-11	CERAMIC	0.1uF		50V	
C750	1-161-494-00	CERAMIC	0.022uF		25V	
C751	1-161-494-00	CERAMIC	0.022uF		25V	
C752	1-161-494-00	CERAMIC	0.022uF		25V	
C753	1-161-494-00	CERAMIC	0.022uF		25V	
C754	1-161-494-00	CERAMIC	0.022uF		25V	
C801	1-124-907-11	ELECT	10uF	20%	50V	
C802	1-136-594-11	FILM	0.018uF	5%	100V	
C803	1-124-907-11	ELECT	10uF	20%	50V	
		(CONNECTOR)				
CN701	* 1-568-834-11	SOCKET, CONNECTOR 15P				
CN702	* 1-568-834-11	SOCKET, CONNECTOR 15P				
CNP301	* 1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P				
CNP302	* 1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P				
CNP303	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P				
CNP304	* 1-564-511-11	PLUG, CONNECTOR 8P				
CNP305	* 1-564-518-11	PLUG, CONNECTOR 3P				
CNP702	* 1-564-339-00	PIN, CONNECTOR 5P				
CNP703	* 1-564-505-11	PLUG, CONNECTOR 2P				
		(COMPOSITION CIRCUIT BLOCK)				
CP701	1-233-199-11	COMPOSITION CIRCUIT BLOCK				
CP702	1-233-199-11	COMPOSITION CIRCUIT BLOCK				
CP703	1-232-944-11	COMPOSITION CIRCUIT BLOCK				

Ref. No.	Part No.	Description		Remarks
		(DIODE)		
D101	8-719-912-20	DIODE	1SS120	
D201	8-719-912-20	DIODE	1SS120	
D301	8-719-912-20	DIODE	1SS120	
D302	8-719-912-20	DIODE	1SS120	
D303	8-719-912-20	DIODE	1SS120	
D304	8-719-933-50	DIODE	HZS7C2L	
D305	8-719-912-20	DIODE	1SS120	
D306	8-719-912-20	DIODE	1SS120	
D307	8-719-912-20	DIODE	1SS120	
D308	8-719-912-20	DIODE	1SS120	
D309	8-719-912-20	DIODE	1SS120	
D601	8-719-301-38	DIODE	SEL2210S-C(AUTO REC LEVEL)	
D701	8-719-912-20	DIODE	1SS120	
D702	8-719-912-20	DIODE	1SS120	
D703	8-719-933-50	DIODE	HZS7C2L	
D704	8-719-933-50	DIODE	HZS7C2L	
D705	8-719-933-50	DIODE	HZS7C2L	
D706	8-719-933-50	DIODE	HZS7C2L	
D707	8-719-933-50	DIODE	HZS7C2L	
D708	8-719-933-50	DIODE	HZS7C2L	
D709	8-719-933-50	DIODE	HZS7C2L	
D710	8-719-933-50	DIODE	HZS7C2L	
D711	8-719-933-50	DIODE	HZS7C2L	
D712	8-719-933-50	DIODE	HZS7C2L	
D713	8-719-912-20	DIODE	1SS120	
D714	8-719-912-20	DIODE	1SS120	
D720	8-719-200-77	DIODE	10E2N	
D721	8-719-200-77	DIODE	10E2N	
D722	8-719-200-77	DIODE	10E2N	
D750	8-719-933-47	DIODE	HZS7B2L	
D751	8-719-933-47	DIODE	HZS7B2L	
D752	8-719-912-20	DIODE	1SS120	
D753	8-719-912-20	DIODE	1SS120	
D801	8-719-109-89	DIODE	RD5.6ESB2	
D802	8-719-200-77	DIODE	10E2N	
D803	8-719-200-77	DIODE	10E2N	
D804	8-719-200-77	DIODE	10E2N	
D805	8-719-200-77	DIODE	10E2N	

MAIN

Ref. No.	Part No.	Description	Remarks
		< IC >	
IC301	8-759-111-44	IC uPC4570C-1	
IC302	8-752-036-34	IC CXA1330S	
IC303	8-752-038-02	IC CXA1198AP	
IC304	8-759-945-58	IC RC4558P	
IC305	8-759-945-58	IC RC4558P	
IC306	8-759-106-56	IC uPC1297CA	
IC701	8-759-633-86	IC M50747-B83SP	
IC702	8-759-634-79	IC M50944-155SP	
IC703	8-759-973-95	IC BA6219B	
IC704	8-759-822-09	IC LB1641	
IC705	8-759-240-69	IC TC4069UBP	
IC706	8-759-822-09	IC LB1641	
		< COIL >	
L101	1-410-780-11	INDUCTOR 27mH	
L201	1-410-780-11	INDUCTOR 27mH	
L301	1-408-080-00	INDUCTOR 100uH	
L801	1-410-761-11	INDUCTOR 0.68mH	
L802	1-408-575-11	INDUCTOR 100uH	
L803	1-408-575-11	INDUCTOR 100uH	
		< FILTER >	
LPF101	1-236-087-11	FILTER, LOW PASS	
LPF201	1-236-087-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-74	TRANSISTOR DTC143TS	
Q103	8-729-821-31	TRANSISTOR 2SD1012-FG	
Q201	8-729-900-89	TRANSISTOR DTC144ES	
Q202	8-729-900-74	TRANSISTOR DTC143TS	
Q203	8-729-821-31	TRANSISTOR 2SD1012-FG	
Q301	8-729-900-65	TRANSISTOR DTA144ES	
Q302	8-729-900-89	TRANSISTOR DTC144ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-820-24	TRANSISTOR 2SC3330-T	
Q305	8-729-900-89	TRANSISTOR DTC144ES	
Q306	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q307	8-729-900-65	TRANSISTOR DTA144ES	
Q308	8-729-900-65	TRANSISTOR DTA144ES	
Q309	8-729-900-89	TRANSISTOR DTC144ES	
Q310	8-729-900-65	TRANSISTOR DTA144ES	
Q311	8-729-900-61	TRANSISTOR DTA114ES	
Q312	8-729-900-80	TRANSISTOR DTC114ES	
Q313	8-729-900-80	TRANSISTOR DTC114ES	
Q314	8-729-900-80	TRANSISTOR DTC114ES	
Q315	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q316	8-729-194-57	TRANSISTOR 2SC945-P	
Q317	8-729-194-57	TRANSISTOR 2SC945-P	
Q318	8-729-900-65	TRANSISTOR DTA144ES	
Q701	8-729-900-80	TRANSISTOR DTC114ES	
Q702	8-729-900-80	TRANSISTOR DTC114ES	
Q703	8-729-900-80	TRANSISTOR DTC114ES	
Q704	8-729-820-24	TRANSISTOR 2SC3330-T	
Q705	8-729-820-24	TRANSISTOR 2SC3330-T	
Q706	8-729-900-89	TRANSISTOR DTC144ES	
Q707	8-729-821-04	TRANSISTOR 2SA1317-STU	
Q708	8-729-900-61	TRANSISTOR DTA114ES	
Q709	8-729-900-61	TRANSISTOR DTA114ES	
Q712	8-729-900-65	TRANSISTOR DTA144ES	
Q713	8-729-900-65	TRANSISTOR DTA144ES	
Q715	8-729-900-80	TRANSISTOR DTC114ES	
Q801	8-729-140-96	TRANSISTOR 2SD774-34	
Q802	8-729-140-96	TRANSISTOR 2SD774-34	
		< RESISTOR >	
R101	1-249-435-11	CARBON 33K 5% 1/4W	
R102	1-249-403-11	CARBON 68 5% 1/4W	
R103	1-247-882-11	CARBON 130K 5% 1/4W	
R104	1-249-426-11	CARBON 5.6K 5% 1/4W	
R105	1-249-420-11	CARBON 1.8K 5% 1/4W	
R107	1-247-887-00	CARBON 220K 5% 1/4W	
R108	1-247-840-00	CARBON 2.4K 5% 1/4W	
R110	1-249-423-11	CARBON 3.3K 5% 1/4W	
R111	1-249-428-11	CARBON 8.2K 5% 1/4W	
R112	1-247-864-11	CARBON 24K 5% 1/4W	
R113	1-249-414-11	CARBON 560 5% 1/4W	
R114	1-249-417-11	CARBON 1K 5% 1/4W	
R115	1-247-846-11	CARBON 4.3K 5% 1/4W	
R116	1-249-423-11	CARBON 3.3K 5% 1/4W	
R117	1-249-417-11	CARBON 1K 5% 1/4W	

MAIN

Ref. No.	Part No.	Description				Remarks
R118	1-249-429-11	CARBON	10K	5%	1/4W	
R119	1-249-425-11	CARBON	4.7K	5%	1/4W	
R120	1-249-421-11	CARBON	2.2K	5%	1/4W	
R121	1-249-429-11	CARBON	10K	5%	1/4W	
R122	1-249-425-11	CARBON	4.7K	5%	1/4W	
R124	1-249-429-11	CARBON	10K	5%	1/4W	
R125	1-249-437-11	CARBON	47K	5%	1/4W	
R126	1-249-431-11	CARBON	15K	5%	1/4W	
R127	1-249-409-11	CARBON	220	5%	1/4W	
R128	1-249-428-11	CARBON	8.2K	5%	1/4W	
R129	1-247-883-00	CARBON	150K	5%	1/4W	
R130	1-249-393-11	CARBON	10	5%	1/4W	
R131	1-249-432-11	CARBON	18K	5%	1/4W	
R132	1-249-439-11	CARBON	10K	5%	1/4W	
R201	1-249-435-11	CARBON	33K	5%	1/4W	
R202	1-249-403-11	CARBON	68	5%	1/4W	
R203	1-247-882-11	CARBON	130K	5%	1/4W	
R204	1-249-426-11	CARBON	5.6K	5%	1/4W	
R205	1-249-420-11	CARBON	1.8K	5%	1/4W	
R207	1-247-887-00	CARBON	220K	5%	1/4W	
R208	1-247-840-00	CARBON	2.4K	5%	1/4W	
R210	1-249-423-11	CARBON	3.3K	5%	1/4W	
R211	1-249-428-11	CARBON	8.2K	5%	1/4W	
R212	1-247-864-11	CARBON	24K	5%	1/4W	
R213	1-249-414-11	CARBON	560	5%	1/4W	
R215	1-247-846-11	CARBON	4.3K	5%	1/4W	
R216	1-249-423-11	CARBON	3.3K	5%	1/4W	
R217	1-249-417-11	CARBON	1K	5%	1/4W	
R218	1-249-429-11	CARBON	10K	5%	1/4W	
R219	1-249-425-11	CARBON	4.7K	5%	1/4W	
R220	1-249-421-11	CARBON	2.2K	5%	1/4W	
R221	1-249-429-11	CARBON	10K	5%	1/4W	
R222	1-249-425-11	CARBON	4.7K	5%	1/4W	
R224	1-249-429-11	CARBON	10K	5%	1/4W	
R225	1-249-437-11	CARBON	47K	5%	1/4W	
R226	1-249-431-11	CARBON	15K	5%	1/4W	
R227	1-249-409-11	CARBON	220	5%	1/4W	
R228	1-249-428-11	CARBON	8.2K	5%	1/4W	
R229	1-247-883-00	CARBON	150K	5%	1/4W	
R230	1-249-393-11	CARBON	10	5%	1/4W	
R231	1-247-432-11	CARBON	18K	5%	1/4W	
R232	1-249-439-11	CARBON	10K	5%	1/4W	
R301	1-249-409-11	CARBON	220	5%	1/4W	
R302	1-249-409-11	CARBON	220	5%	1/4W	
R303	1-249-433-11	CARBON	22K	5%	1/4W	

Ref. No.	Part No.	Description				Remarks
R304	1-249-435-11	CARBON	33K	5%	1/4W	
R305	1-249-436-11	CARBON	39K	5%	1/4W	
R306	1-247-880-11	CARBON	110K	5%	1/4W	
R307	1-247-885-00	CARBON	180K	5%	1/4W	
R308	1-249-436-11	CARBON	39K	5%	1/4W	
R309	1-247-881-00	CARBON	120K	5%	1/4W	
R310	1-247-874-11	CARBON	62K	5%	1/4W	
R311	1-247-872-11	CARBON	51K	5%	1/4W	
R312	1-247-889-00	CARBON	270K	5%	1/4W	
R313	1-247-883-00	CARBON	150K	5%	1/4W	
R314	1-247-870-11	CARBON	43K	5%	1/4W	
R315	1-247-893-11	CARBON	390K	5%	1/4W	
R316	1-249-438-11	CARBON	56K	5%	1/4W	
R317	1-247-872-11	CARBON	51K	5%	1/4W	
R318	1-247-876-11	CARBON	75K	5%	1/4W	
R319	1-249-441-11	CARBON	100K	5%	1/4W	
R320	1-249-438-11	CARBON	56K	5%	1/4W	
R321	1-247-881-00	CARBON	120K	5%	1/4W	
R322	1-249-433-11	CARBON	22K	5%	1/4W	
R323	1-249-409-11	CARBON	220	5%	1/4W	
R324	1-249-433-11	CARBON	22K	5%	1/4W	
R325	1-249-433-11	CARBON	22K	5%	1/4W	
R326	1-249-425-11	CARBON	4.7K	5%	1/4W	
R327	1-247-887-00	CARBON	220K	5%	1/4W	
R328	1-249-429-11	CARBON	10K	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-249-428-11	CARBON	8.2K	5%	1/4W	
R331	1-249-423-11	CARBON	3.3K	5%	1/4W	
R332	1-249-417-11	CARBON	1K	5%	1/4W	
R333	1-249-441-11	CARBON	100K	5%	1/4W	
R334	1-249-441-11	CARBON	100K	5%	1/4W	
R335	1-249-419-11	CARBON	1.5K	5%	1/4W	
R336	1-247-850-11	CARBON	6.2K	5%	1/4W	
R337	1-249-421-11	CARBON	2.2K	5%	1/4W	
R338	1-249-429-11	CARBON	10K	5%	1/4W	
R339	1-249-429-11	CARBON	10K	5%	1/4W	
R340	1-249-437-11	CARBON	47K	5%	1/4W	
R341	1-249-437-11	CARBON	47K	5%	1/4W	
R342	⚠1-212-851-00	FUSIBLE	5.6	5%	1/4W	F
R343	1-215-455-00	METAL	27K	1%	1/6W	
R344	1-247-864-11	CARBON	24K	5%	1/4W	
R345	1-249-437-11	CARBON	47K	5%	1/4W	
R601	1-249-410-11	CARBON	270	5%	1/4W	
R602	1-249-415-11	CARBON	680	5%	1/4W	
R701	1-249-429-11	CARBON	10K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MAIN **MD**

Ref. No.	Part No.	Description				Remarks
R702	1-249-429-11	CARBON	10K	5%	1/4W	
R703	1-249-425-11	CARBON	4.7K	5%	1/4W	
R704	1-249-425-11	CARBON	4.7K	5%	1/4W	
R705	1-249-425-11	CARBON	4.7K	5%	1/4W	
R706	1-247-903-00	CARBON	1M	5%	1/4W	
R707	1-249-433-11	CARBON	22K	5%	1/4W	
R708	1-249-411-11	CARBON	330	5%	1/4W	
R709	1-247-830-11	CARBON	910	5%	1/4W	
R710	1-249-418-11	CARBON	1.2K	5%	1/4W	
R711	1-249-417-11	CARBON	1K	5%	1/4W	
R712	⚠1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R713	1-249-421-11	CARBON	2.2K	5%	1/4W	
R714	1-249-419-11	CARBON	1.5K	5%	1/4W	
R715	1-249-417-11	CARBON	1K	5%	1/4W	
R716	⚠1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R717	1-249-436-11	CARBON	39K	5%	1/4W	
R718	1-249-436-11	CARBON	39K	5%	1/4W	
R719	1-247-887-00	CARBON	220K	5%	1/4W	
R720	1-247-887-00	CARBON	220K	5%	1/4W	
R721	1-249-425-11	CARBON	4.7K	5%	1/4W	
R722	1-249-425-11	CARBON	4.7K	5%	1/4W	
R724	1-249-433-11	CARBON	22K	5%	1/4W	
R725	1-247-903-00	CARBON	1M	5%	1/4W	
R726	1-249-429-11	CARBON	10K	5%	1/4W	
R727	1-249-425-11	CARBON	4.7K	5%	1/4W	
R728	1-249-425-11	CARBON	4.7K	5%	1/4W	
R729	1-249-425-11	CARBON	4.7K	5%	1/4W	
R730	1-249-433-11	CARBON	22K	5%	1/4W	
R731	1-249-433-11	CARBON	22K	5%	1/4W	
R732	1-249-424-11	CARBON	3.9K	5%	1/4W	
R733	1-249-429-11	CARBON	10K	5%	1/4W	
R734	1-249-441-11	CARBON	100K	5%	1/4W	
R735	1-249-439-11	CARBON	68K	5%	1/4W	
R736	1-249-417-11	CARBON	1K	5%	1/4W	
R737	1-249-417-11	CARBON	1K	5%	1/4W	
R738	⚠1-212-950-00	FUSIBLE	4.7	5%	1/2W	F
R739	1-249-429-11	CARBON	10K	5%	1/4W	
R740	1-249-429-11	CARBON	10K	5%	1/4W	
R741	1-249-415-11	CARBON	680	5%	1/4W	
R742	1-249-420-11	CARBON	1.8K	5%	1/4W	
R743	1-249-410-11	CARBON	270	5%	1/4W	
R744	1-249-421-11	CARBON	2.2K	5%	1/4W	
R745	1-249-421-11	CARBON	2.2K	5%	1/4W	
R746	1-249-421-11	CARBON	2.2K	5%	1/4W	
R747	1-249-421-11	CARBON	2.2K	5%	1/4W	

Ref. No.	Part No.	Description				Remarks
R748	1-249-429-11	CARBON	10K	5%	1/4W	
R749	1-249-429-11	CARBON	10K	5%	1/4W	
R771	1-249-405-11	CARBON	100	5%	1/4W	
R772	1-249-405-11	CARBON	100	5%	1/4W	
R773	1-249-405-11	CARBON	100	5%	1/4W	
R780	1-249-433-11	CARBON	22K	5%	1/4W	
R801	1-249-431-11	CARBON	15K	5%	1/4W	
R802	1-249-431-11	CARBON	15K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV101	1-238-597-11	RES, ADJ, CARBON 1K				
RV102	1-238-600-11	RES, ADJ, CARBON 10K				
RV103	1-238-601-11	RES, ADJ, CARBON 22K				
RV201	1-238-597-11	RES, ADJ, CARBON 1K				
RV202	1-238-600-11	RES, ADJ, CARBON 10K				
RV203	1-238-601-11	RES, ADJ, CARBON 22K				
RV301	1-241-232-11	RES, VAR, CARBON 20K/20K/20K(REC LEVEL)				
		< RELAY >				
RY301	1-515-726-11	RELAY				
		< SWITCH >				
S601	1-554-303-21	SWITCH, TACTILE (AUTO REC LEVEL)				
S605	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)				
		< TRANSFORMER >				
T101	1-433-335-11	TRANSFORMER, BIAS OSCILLATION				
T201	1-433-335-11	TRANSFORMER, BIAS OSCILLATION				
T301	1-433-336-11	TRANSFORMER, BIAS OSCILLATION				
T801	1-450-673-11	TRANSFORMER, DC-DC CONVERTER				
		< CRYSTAL >				
X701	1-577-358-21	VIBRATOR, CERAMIC 4MHz				
X702	1-577-358-21	VIBRATOR, CERAMIC 4MHz				

****

Ref. No.	Part No.	Description	Remarks
	* 1-632-740-11	MD BOARD ********	
	3-356-631-01	HOLDER (SENSOR)	
		< CONNECTOR >	
CN1001	1-506-615-11	PIN, CONNECTOR 9P	
CN1002	* 1-564-502-11	PIN, CONNECTOR 10P	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
TB1001	* 1-569-066-11	PIN, CONNECTOR 5P	
		< IC >	
IC1001	8-749-920-97	IC PHOTO REFLECTOR GP2S22B(SUPPLY REEL)	
IC1002	8-749-920-97	IC PHOTO REFLECTOR GP2S22B (TAKE UP REEL)	
		< RESISTOR >	
R1001	1-249-408-11	CARBON 180 5% 1/4W	
R1002	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S1001	1-466-526-11	ENCODER, ROTARY	
S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (DOOR)	
S1003	1-571-958-11	SWITCH, PUSH (1 KEY) (CLOSE)	
S1004	1-572-126-11	SWITCH, PUSH (1 KEY) (OPEN)	
S1005	1-572-125-11	SWITCH, LEAF (FWD TAB)	
S1006	1-572-202-11	SWITCH, LEAF (HALF)	
S1007	1-572-125-11	SWITCH, LEAF (METAL)	
S1008	1-572-125-11	SWITCH, LEAF (70uS)	
S1009	1-572-125-11	SWITCH, LEAF (REV TAB)	
##			
	* A-2006-453-A	PANEL BOARD, COMPLETE #####################	
	* 3-368-109-01	HOLDER, FL TUBE	
	* 4-921-941-01	CUSHION (FL)	
		< CAPACITOR >	
C601	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C602	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C603	1-163-137-00	CERAMIC CHIP 680P 10% 50V	
C604	1-163-137-00	CERAMIC CHIP 680P 10% 50V	
C605	1-163-137-00	CERAMIC CHIP 680P 10% 50V	
C606	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
		< CONNECTOR >	
CN601	* 1-568-858-11	SOCKET, CONNECTOR 15P	
CNP601	* 1-564-495-11	PIN, CONNECTOR 2P	
		< DIODE >	
D601	8-719-301-38	DIODE SEL2210-C	
D602	8-719-988-62	DIODE 1SS355	
D603	8-719-988-62	DIODE 1SS355	
		< INDICATOR >	
FL601	1-519-656-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC601	8-759-323-62	IC HD614023FA89	
		< RESISTOR >	
R603	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R604	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R605	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R606	1-216-029-00	METAL CHIP 150 5% 1/10W	
R607	1-216-033-00	METAL CHIP 220 5% 1/10W	
R608	1-216-037-00	METAL CHIP 330 5% 1/10W	
R609	1-216-041-00	METAL CHIP 470 5% 1/10W	
R610	1-216-045-00	METAL CHIP 680 5% 1/10W	
R611	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R612	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R613	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R614	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R615	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R616	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R617	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R618	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R620	1-216-025-00	METAL CHIP 100 5% 1/10W	
R621	1-216-025-00	METAL CHIP 100 5% 1/10W	
R622	1-216-025-00	METAL CHIP 100 5% 1/10W	
		< SWITCH >	
S602	1-554-303-21	SWITCH, TACTILE (◁◁)	
S603	1-554-303-21	SWITCH, TACTILE (▷▷)	
S604	1-554-303-21	SWITCH, TACTILE (● REC)	
S606	1-554-303-21	SWITCH, TACTILE (□)	
S607	1-554-303-21	SWITCH, TACTILE (▷)	
S608	1-554-303-21	SWITCH, TACTILE (◁)	
S609	1-554-303-21	SWITCH, TACTILE (▮▮ PAUSE)	
S610	1-554-303-21	SWITCH, TACTILE (○ MUTE)	
S611	1-554-303-21	SWITCH, TACTILE (COUNTER RESET)	
S612	1-570-834-11	SWITCH, SLIDE (DOLBY NR)	
S613	1-570-842-11	SWITCH, SLIDE (DIRECTION MODE)	
		< CRYSTAL >	
X601	1-577-359-21	VIBRATOR, CERAMIC 4.19MHz	

PIN JACK

Ref. No.	Part No.	Description				Remarks
**						
	* A-2006-548-A	PIN JACK BOARD, COMPLETE				
		************************				
		< CAPACITOR >				
C401	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C402	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C403	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C404	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C405	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C407	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C409	1-124-465-00	ELECT	0.47uF	20%	50V	
C410	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C411	1-126-163-11	ELECT	4.7uF	20%	50V	
C412	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C413	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C414	1-124-257-00	ELECT	2.2uF	20%	50V	
C416	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C417	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C418	1-126-157-11	ELECT	10uF	20%	16V	
C419	1-126-157-11	ELECT	10uF	20%	16V	
C451	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C452	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C453	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C454	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C455	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C457	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C459	1-124-465-00	ELECT	0.47uF	20%	50V	
C460	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C461	1-126-163-11	ELECT	4.7uF	20%	50V	
C462	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C463	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C464	1-124-257-00	ELECT	2.2uF	20%	50V	
C466	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C467	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C468	1-126-012-11	ELECT	470uF	20%	16V	
C469	1-126-012-11	ELECT	470uF	20%	16V	
C470	1-126-012-11	ELECT	470uF	20%	16V	
C481	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C482	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C483	1-126-177-11	ELECT	100uF	20%	10V	
C484	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C485	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C486	1-126-157-11	ELECT	10uF	20%	16V	
C487	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C488	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C489	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C490	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C491	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C492	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C493	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C494	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C495	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C496	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C497	1-126-301-11	ELECT	1uF	20%	50V	
C4001	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C4002	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C4003	1-124-589-11	ELECT	47uF	20%	16V	
C4010	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C4013	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C4020	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C4021	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C4022	1-124-589-11	ELECT	47uF	20%	16V	
		< CONNECTOR >				
CN401	* 1-568-834-11	SOCKET, CONNECTOR 15P				
CNJ401	* 1-580-740-11	SOCKET, CONNECTOR 17P				
CNJ402	* 1-573-187-11	PIN, CONNECTOR (PC BOARD) 7P				
CNJ403	* 1-573-388-11	PIN, CONNECTOR (PC BOARD) 8P				
		< DIODE >				
D401	8-719-990-36	DIODE DCA010				
D403	8-719-210-33	DIODE EC10DS2				
D404	8-719-210-33	DIODE EC10DS2				
D405	8-719-990-36	DIODE DCA010				
D4001	8-719-988-62	DIODE 1SS355				
D4002	8-719-988-62	DIODE 1SS355				
		< IC >				
IC401	8-759-636-55	IC M5218AFP				
IC402	8-759-636-55	IC M5218AFP				
IC403	8-759-009-05	IC MC14051BF				
IC404	8-759-009-05	IC MC14051BF				
IC405	8-759-516-47	IC CD4066BCM				
IC406	8-759-636-35	IC M50760-315FP				
IC407	8-759-991-77	IC BA7625				

PIN JACK

Ref. No.	Part No.	Description	Remarks
		< JACK >	
J401	1-565-304-11	JACK, PIN 4P (AUDIO)	
J402	* 1-569-812-11	JACK, PIN 6P (AUDIO)	
J403	1-565-933-11	JACK, PIN 3P (VIDEO)	
J404	1-573-144-11	JACK, PIN 2P (VIDEO)	
		< JUMPER >	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW8	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW10	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW12	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW413	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW414	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW439	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW441	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW463	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW464	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L401	1-408-789-21	INDUCTOR, CHIP 100uH	
L4001	1-408-777-00	INDUCTOR, CHIP 10uF	
		< TRANSISTOR >	
Q401	8-729-805-65	TRANSISTOR 2SA1344	
Q402	8-729-805-65	TRANSISTOR 2SA1344	
Q403	8-729-602-36	TRANSISTOR 2SA1602-F	
Q404	8-729-602-36	TRANSISTOR 2SA1602-F	
Q405	8-729-602-36	TRANSISTOR 2SA1602-F	
Q406	8-729-602-36	TRANSISTOR 2SA1602-F	
Q407	8-729-602-21	TRANSISTOR 2SC4154-F	
		< RESISTOR >	
R401	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R402	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R403	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R404	1-216-041-00	METAL CHIP 470 5% 1/10W	
R405	1-216-041-00	METAL CHIP 470 5% 1/10W	
R407	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R408	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R409	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R410	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R411	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R415	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R417	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R418	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R419	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R420	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R421	1-216-001-00	METAL CHIP 10 5% 1/10W	
R422	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R423	1-216-041-00	METAL CHIP 470 5% 1/10W	
R425	1-216-025-00	METAL CHIP 100 5% 1/10W	
R426	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R427	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R428	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R429	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R430	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R431	1-216-022-00	METAL CHIP 75 5% 1/10W	
R432	1-216-022-00	METAL CHIP 75 5% 1/10W	
R434	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R435	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R436	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R437	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R440	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R442	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R450	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R451	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R452	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R453	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R454	1-216-041-00	METAL CHIP 470 5% 1/10W	
R455	1-216-041-00	METAL CHIP 470 5% 1/10W	
R457	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R458	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R459	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R460	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R461	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R465	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R467	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R468	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R469	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R470	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R471	1-216-001-00	METAL CHIP 10 5% 1/10W	
R472	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R473	1-216-041-00	METAL CHIP 470 5% 1/10W	
R475	1-216-025-00	METAL CHIP 100 5% 1/10W	
R476	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R477	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R478	1-216-089-00	METAL CHIP 47K 5% 1/10W	

PIN JACK | POWER

Ref. No.	Part No.	Description	Remarks
R481	1-216-022-00	METAL CHIP 75 5% 1/10W	
R482	1-216-022-00	METAL CHIP 75 5% 1/10W	
R483	1-216-022-00	METAL CHIP 75 5% 1/10W	
R484	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R485	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R486	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R487	1-216-029-00	METAL CHIP 150 5% 1/10W	
R488	1-216-029-00	METAL CHIP 150 5% 1/10W	
R489	1-216-031-00	METAL CHIP 180 5% 1/10W	
R490	1-216-031-00	METAL CHIP 180 5% 1/10W	
R491	1-216-031-00	METAL CHIP 180 5% 1/10W	
R492	1-216-029-00	METAL CHIP 150 5% 1/10W	
R493	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R494	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R495	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R496	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R497	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R499	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R500	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
		(CRYSTAL)	
X401	1-577-077-11	OSCILLATOR, CERAMIC 400KHz	

****

Ref. No.	Part No.	Description	Remarks
	* 1-639-415-11	POWER BOARD ***********	
	7-685-646-79	SCREW +BVTP 3X8 TYPE N-S	
		(CAPACITOR)	
C501	1-124-556-11	ELECT 2200uF 20% 16V	
C502	1-124-556-11	ELECT 2200uF 20% 16V	
C503	1-124-360-00	ELECT 1000uF 20% 16V	
C504	1-124-556-11	ELECT 2200uF 20% 16V	
C505	1-126-059-11	ELECT 10uF 20% 50V	
C506	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C507	1-124-903-11	ELECT 1uF 20% 50V	
C508	1-124-472-11	ELECT 470uF 20% 10V	
C509	1-124-472-11	ELECT 470uF 20% 10V	
C510	1-124-477-11	ELECT 47uF 20% 25V	
C511	1-124-903-11	ELECT 1uF 20% 50V	
C512	1-124-477-11	ELECT 47uF 20% 25V	
C513	1-124-903-11	ELECT 1uF 20% 50V	
C514	1-124-472-11	ELECT 470uF 20% 10V	
C515	1-124-477-11	ELECT 47uF 20% 25V	
C516	1-124-903-11	ELECT 1uF 20% 50V	
C518	1-124-473-11	ELECT 1000uF 20% 10V	
C519	1-124-473-11	ELECT 1000uF 20% 10V	
C520	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C521	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C526	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C527	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C528	1-164-232-11	CERAMIC CHIP 0.01uF 10% 50V	
C5001	1-163-009-11	CERAMIC CHIP 1000P 10% 50V	
C5002	1-163-009-11	CERAMIC CHIP 1000P 10% 50V	
C5004	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C5005	1-164-232-11	CERAMIC CHIP 0.01uF 10% 50V	
C5007	1-164-346-11	CERAMIC CHIP 1uF 16V	
		(CONNECTOR)	
CN402	* 1-573-187-11	PIN, CONNECTOR (PC BOARD) 7P	
CN403	* 1-573-388-11	PIN, CONNECTOR (PC BOARD) 8P	
		(DIODE)	
D501	8-719-210-33	DIODE EC10DS2	
D502	8-719-210-33	DIODE EC10DS2	
D503	8-719-210-33	DIODE EC10DS2	
D504	8-719-210-33	DIODE EC10DS2	
D505	8-719-988-62	DIODE 1SS355	
D506	8-719-106-36	DIODE RD8.2M-B3	
D508	8-719-210-33	DIODE EC10DS2	
D509	8-719-210-33	DIODE EC10DS2	
D510	8-719-210-33	DIODE EC10DS2	
D511	8-719-210-33	DIODE EC10DS2	
		(FUSE)	
F501	⚠1-532-843-21	FUSE 2.5A	
F502	⚠1-532-843-21	FUSE 2.5A	
		(IC)	
IC501	8-759-823-46	IC LA5603	
		(TRANSISTOR)	
Q501	8-729-209-15	TRANSISTOR 2SD2012	
Q502	8-729-111-67	TRANSISTOR 2SB1094-L	
Q503	8-729-805-65	TRANSISTOR 2SA1344	
Q504	8-729-602-21	TRANSISTOR 2SC4154-F	
Q505	8-729-602-21	TRANSISTOR 2SC4154-F	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
Q506	8-729-602-36	TRANSISTOR 2SA1602-EF	
Q510	8-729-805-49	TRANSISTOR 2SC3398	
Q511	8-729-602-36	TRANSISTOR 2SA1602-EF	
		< RESISTOR >	
R501	1-216-033-00	METAL CHIP 220 5% 1/10W	
R502	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R503	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R504	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R505	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R520	1-216-058-00	METAL CHIP 2.4K 5% 1/10W	
R521	1-216-056-00	METAL CHIP 2K 5% 1/10W	
R5001	1-216-025-00	METAL CHIP 100 5% 1/10W	
R5002	1-216-025-00	METAL CHIP 100 5% 1/10W	

****

* 1-632-741-11 REEL MOTOR BOARD

****

Ref. No.	Part No.	Description	Remarks
		< CAPACITOR >	
C1051	1-124-907-11	ELECT 10uF 20% 50V	
C1052	1-124-907-11	ELECT 10uF 20% 50V	
C1053	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
CN1051	* 1-564-499-11	PIN, CONNECTOR 6P	
CN1052	* 1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	
CN1053	* 1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	
		< RESISTOR >	
R1051	1-249-414-11	CARBON 560 5% 1/4W	

****

* 1-634-323-11 TRANSLATION BOARD

****

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN1091	* 1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
CN1092	* 1-564-509-11	PLUG, CONNECTOR 6P	

****

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS *************	
4	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
11	* 1-573-188-11	CONNECTOR, BRIDGE 7P	
12	* 1-573-389-11	COONECTOR, BRIDGE 8P	
13	1-575-664-11	WIRE, FLAT TYPE (15 CORE)	
D1051	8-719-980-85	DIODE SLF-325C	
HRPE1001	A-2003-772-A	BASE ASSY, HEAD	
IC1001	8-749-920-97	IC PHOTO REFLECTOR GP2S22B	
IC1002	8-749-920-97	IC PHOTO REFLECTOR GP2S22B	
M1051	X-3356-638-1	MOTOR (REEL R) ASSY	
M1052	X-3356-604-1	MOTOR (ASSIST) ASSY	
M1053	X-3356-635-1	MOTOR (CAPSTAN R2) ASSY	
S1001	1-466-525-11	ENCODER, ROTARY	

****

HARDWARE LIST

****

# 1	7-621-773-93	SCREW (PANEL 2.6 TP2)
# 2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
# 3	7-682-547-04	SCREW +BVTT 3X6 (S)
# 4	7-621-283-00	SCREW +BVTT 2X5 (S)
# 5	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S
# 6	7-621-255-20	SCREW +BVTT 2X4 (S)
# 7	7-621-255-35	SCREW +BVTT 2X5 (S)
# 8	7-621-770-67	SCREW +BVTT 2.6X6 (S)
# 9	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S
#10	7-621-849-00	SCREW (BV/RING)
# 11	7-621-255-15	SCREW +PTT 2X3 (S)

SS-H7700D

SERVICE MANUAL

AEP Model
E Model
Tourist Model

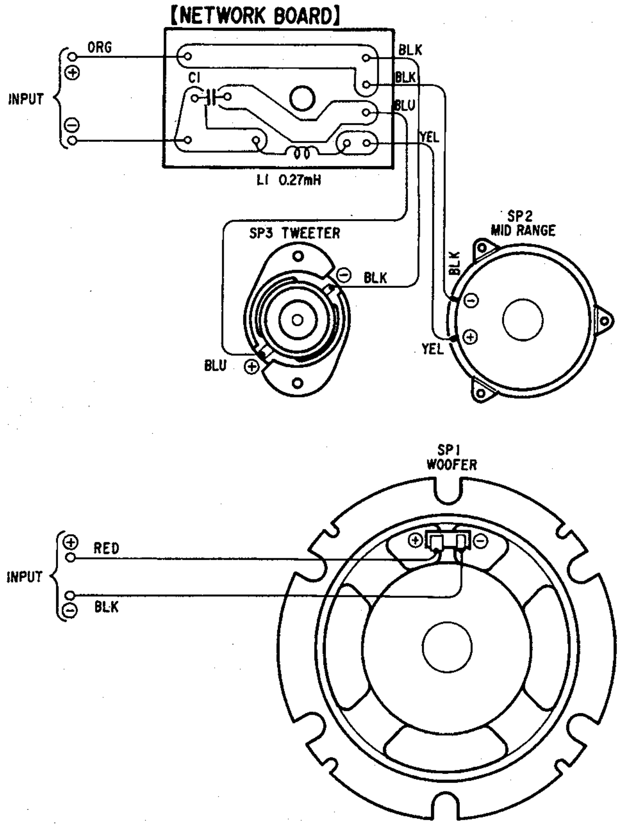
SPECIFICATIONS

Speaker system	3-way, 4-box type
Satellite unit	
Speaker units	Mid-range : 8 cm (3 in.) cone type Tweeter : 2.5 cm (1in.) balance drive type
Rated impedance	8 ohms
Power handling capacity	Maximum input power 50W
Effective frequency range	150-20,000 Hz
Sensitivity	89 dB/W/m
Dimensions	Approx. 185x115x225mm (w/h/d) ($7^{3}/_{8}$ x $4^{5}/_{8}$ x $8^{7}/_{8}$ in.)
Weight	Approx. 1.8kg (3 lb 15 oz)
Bass unit	
Speaker unit	Woofer : 15 cm (6 in.) cone type
Rated impedance	6 ohms
Power handling capacity	Maximum input power 70W
Effective frequency range	40-150Hz
Sensitivity	89 dB/W/m
Dimensions	Approx. 185x250x225mm (w/h/d) ($7^{3}/_{8}$ x $9^{7}/_{8}$ x $8^{7}/_{8}$ in.)
Weight	Approx. 3.4kg (7 lb 8 oz)

Design and specifications subject to change without notice.

This set is the speaker system in FH-E959 and MHC-7700D.

1. WIRING DIAGRAM


[NETWORK BOARD]
ORG
INPUT
⊕
⊖
C1
L1 0.27mH
BLK
BLK
BLU
YEL
SP3 TWEETER
⊖ BLK
BLU ⊕
SP2
MID RANGE
BLK
⊖
⊕
YEL
SP1
WOOFER
⊕ RED
INPUT
⊖ BLK
⊕
⊖

MICROFILM

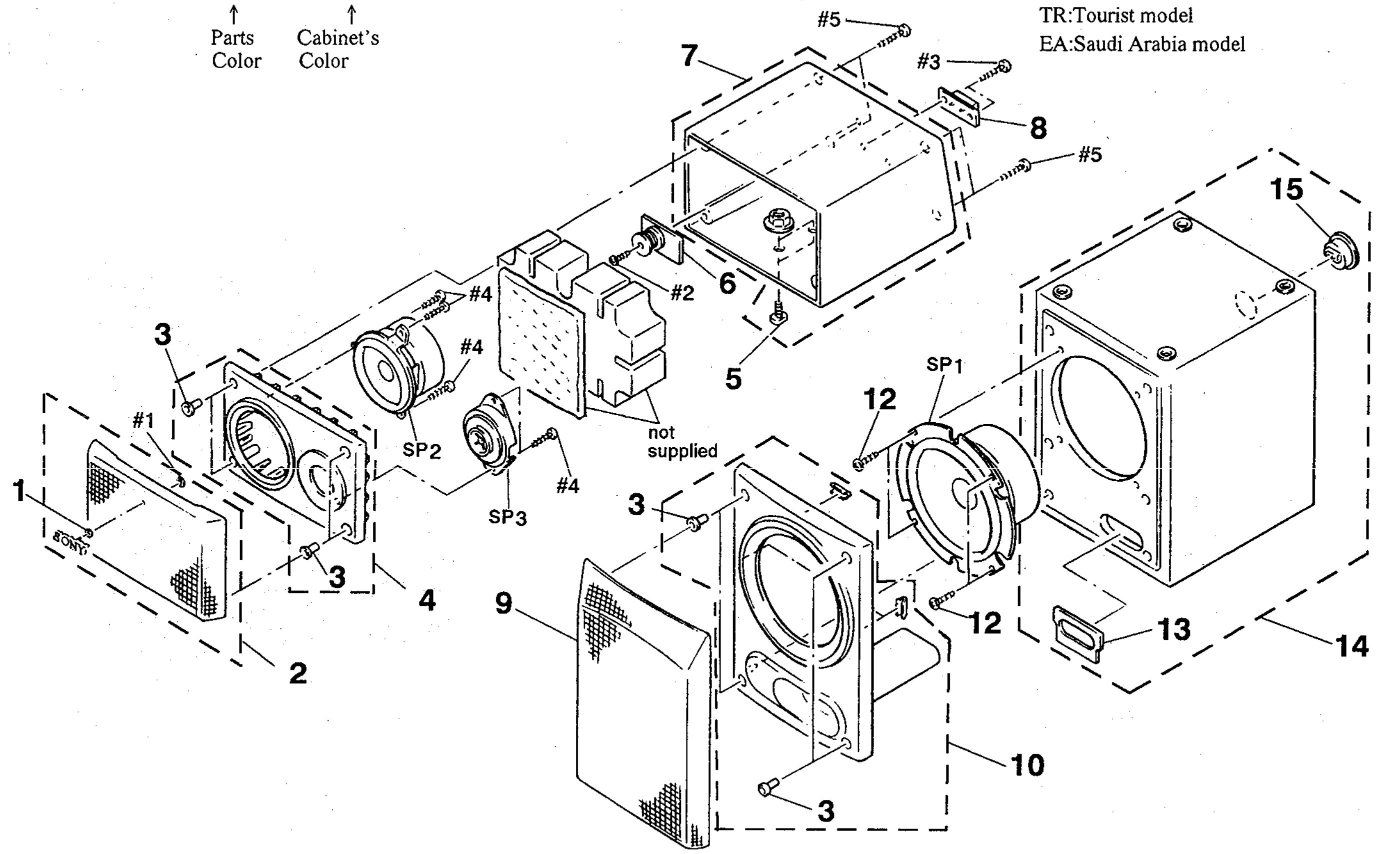
SPEAKER SYSTEM

SONY®

2. EXPLODED VIEW AND PARTS LIST

NOTE:

- –XX, –X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts.
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "＊" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Hardware (# mark) list is given in the last of this parts list.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  IT:Italian model
  G:Germany model
  TR:Tourist model
  EA:Saudi Arabia model



Ref. No.	Part No.	Description	Remark
1	3-701-437-21	WASHER	
2	X-4942-686-1	FRAME (S) ASSY, GRILLE	
3	4-912-253-01	CATCHER	
4	X-4942-687-1	PANEL (S) ASSY, FRONT	
5	4-928-613-21	NUT, STAND FIXED	
＊ 6	1-589-388-11	MOUNTED PC BOARD (NETWORK) (AEP, IT, G)	
＊ 6	1-589-388-21	MOUNTED PC BOARD (NETWORK) (E, EA, TR)	
7	X-4942-688-1	CABINET (S) ASSY, SPEAKER	
8	1-537-337-31	TERMINAL BOAED (2P. SP)	
9	X-4942-689-1	FRAME (W) ASSY, GRILLE	
10	X-4942-690-1	PANEL (W) (R) ASSY, FRONT	
10	X-4942-691-1	PANEL (W) (L) ASSY, FRONT	
12	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
＊ 13	4-949-398-01	PACKING (D)	
14	X-4942-692-1	CABINET (W) (R) ASSY, SPEAKER (AEP, E, EA, TR, IT)	
14	X-4942-693-1	CABINET (W) (L) ASSY, SPEAKER (AEP, E, EA, TR, IT)	
14	X-4942-697-1	CABINET (W) (R) ASSY, SPEAKER (G)	
14	X-4942-698-1	CABINET (W) (L) ASSY, SPEAKER (G)	

Ref. No.	Part No.	Description	Remark
15	1-537-332-11	TERMINAL BOARD	
SP1	1-544-628-11	SPEAKER (15cm)	
SP2	1-544-744-11	SPEAKER (8cm) (AEP, IT, G)	
SP2	1-544-744-21	SPEAKER (8cm) (E, EA, TR)	
SP3	5-544-626-11	SPEAKER (2.5cm)	
		< ACCESSORIES & PACKING MATERIALS >	
	1-590-855-11	CORD, SPEAKER (AEP, IT, G)	
	3-694-922-01	SHEET, PROTECTION	
	3-701-630-00	BAG, POLYETHYLENE (AEP, IT, G)	
	3-755-033-11	MANUAL, INSTRUCTION (AEP, IT, G) (ENGLISH, FRENCH, SPANISH, PORTUGUESE, GERMAN, DUTCH, SWEDISH, ITALIAN)	
＊	4-945-080-01	CUSHION	
		< HARDWARE LIST >	
#1	7-624-200-11	NUT, PUSH 2	
#2	7-685-165-01	SCREW +PTP 4X25 TYPE1	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-660-79	SCREW +BVTP 4X10 TYPE2 IT-3	
#5	7-685-663-79	SCREW +BVTP 4X16 TYPE2 IT-3	

9-957-265-11

Sony Corporation
Audio Group

English
92F0660-1
Printed in Japan

©1992.6

Published by Customer Relations and Service Group

TA-H7710D

SERVICE MANUAL

AEP Model
UK Model

SONY
VOLUME
MHC-7710D
VIDEO
AUDIO

This set is the Amplifier section in MHC-7710D.

SPECIFICATIONS

Continuous RMS power output	50 + 50 watts (6 ohms at 1 kHz, DIN) 58 + 58 watts (6 ohms at 1 kHz, 5% THD)
Music power output	85 + 85 watts (6 ohms at 1 kHz 10% THD)
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKERS: accepts speakers of 6 to 16 ohms

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

INTEGRATED STEREO AMPLIFIER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

1-1. Parts Identification 2

2. DISASSEMBLY

2-1. Front Panel Assy 3
2-2. Panel Board 3
2-3. Back Panel 4
2-4. Jack Board, Speaker Board 4
2-5. Power Board, DSP Board 5
2-6. Power Transformer 5

3. DIAGRAMS

3-1. Circuit Boards Location 6
3-2. Semiconductor Lead Layouts 6
3-3. Printed Wiring Boards
— Power/Jack/Volume Section — 8
3-4. Schematic Diagram
— Power/Jack/Volume Section — 11
3-5. Schematic Diagram — DSP Section— 14
3-6. Printed Wiring Board — DSP Section — 17
3-7. Printed Wiring Board — Panel Section — 21
3-8. Schematic Diagram — Panel Section — 25

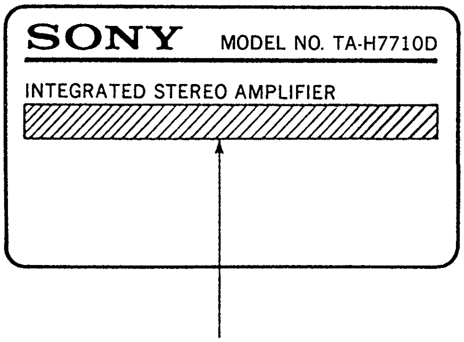
4. EXPLODED VIEWS

4-1. Front Panel Assy 29
4-2. Chassis Section 30

5. ELECTRICAL PARTS LIST 31

MODEL IDENTIFICATION

— Model Number Label —



SONY MODEL NO. TA-H7710D

INTEGRATED STEREO AMPLIFIER

AEP model: AC: 220—230V~50/60Hz
UK model : AC: 240V~50Hz

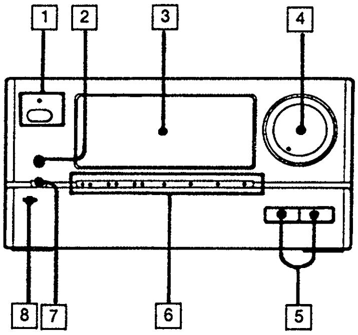
* * *

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. PARTS IDENTIFICATION

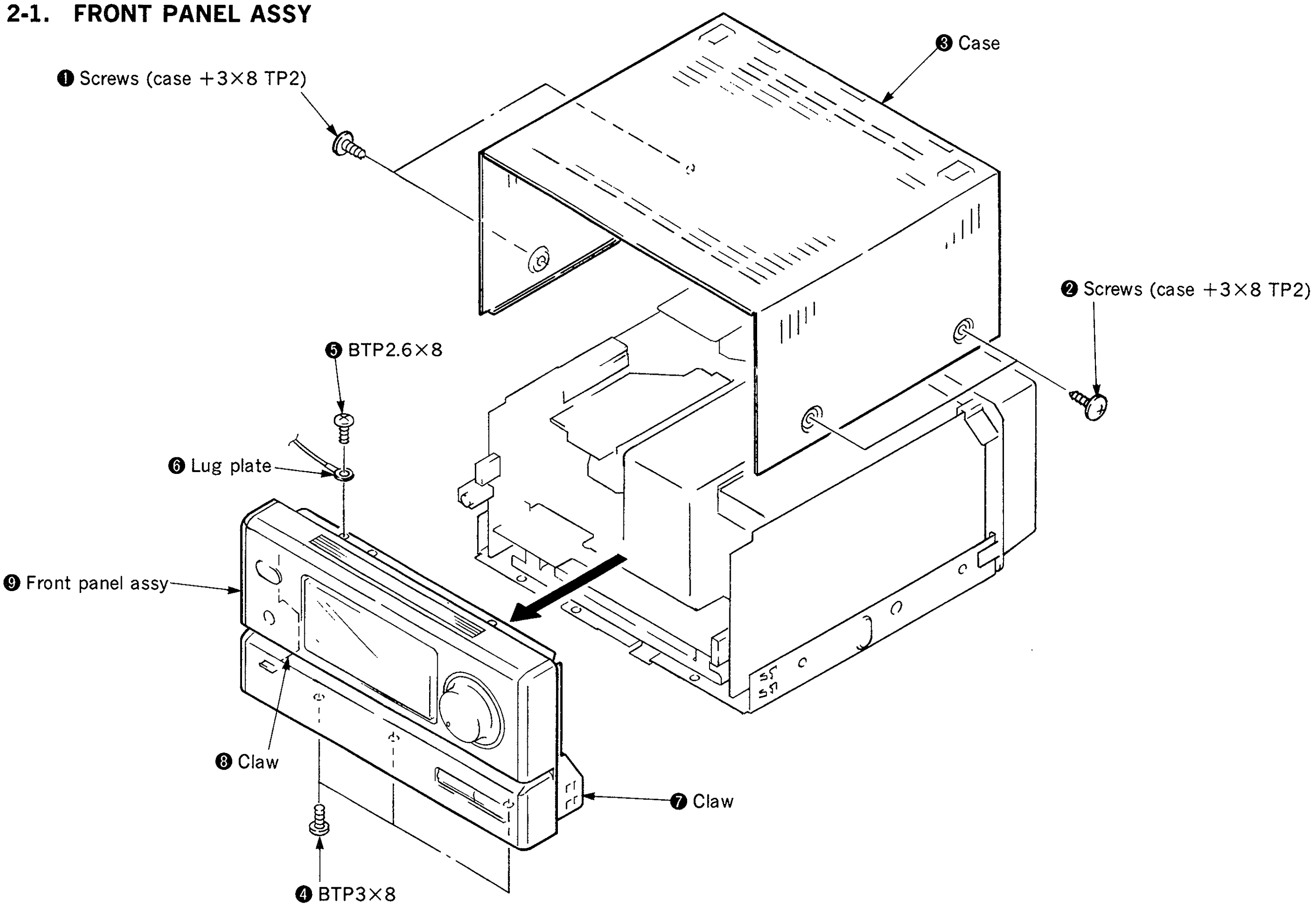
1. SYSTEM POWER switch and STANDBY indicator
   The indicator remains lit as long as the AC power cord is connected to a wall outlet.
2. HEADPHONES jack (stereo minijack)
3. Display window
4. VOLUME control ㉘
5. VIDEO and AUDIO FUNCTION selectors ㉒ (142)
6. Function indicators ㉒ (142)
7. WAKE UP VOL SET indicator (140)
8. OPEN tab



SECTION 2
DISASSEMBLY

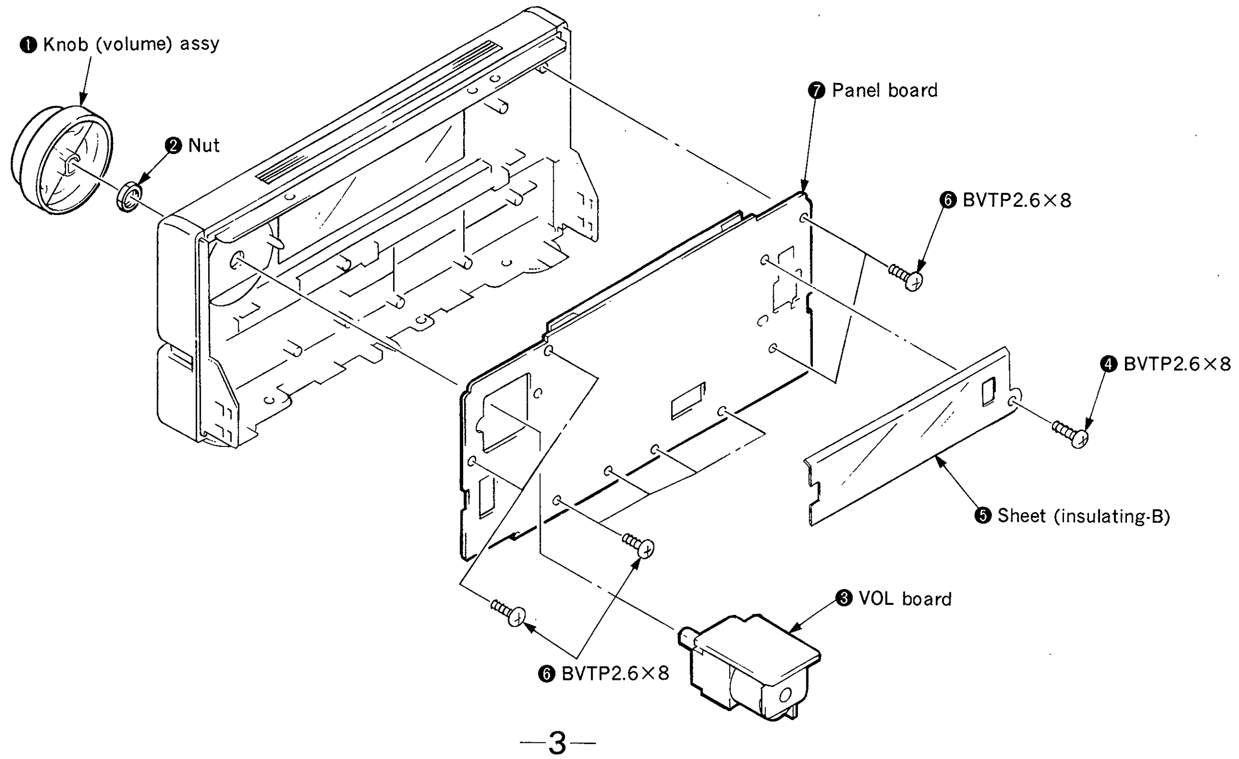
Note : Follow the disassembly procedure in the numerical order given.

2-1. FRONT PANEL ASSY



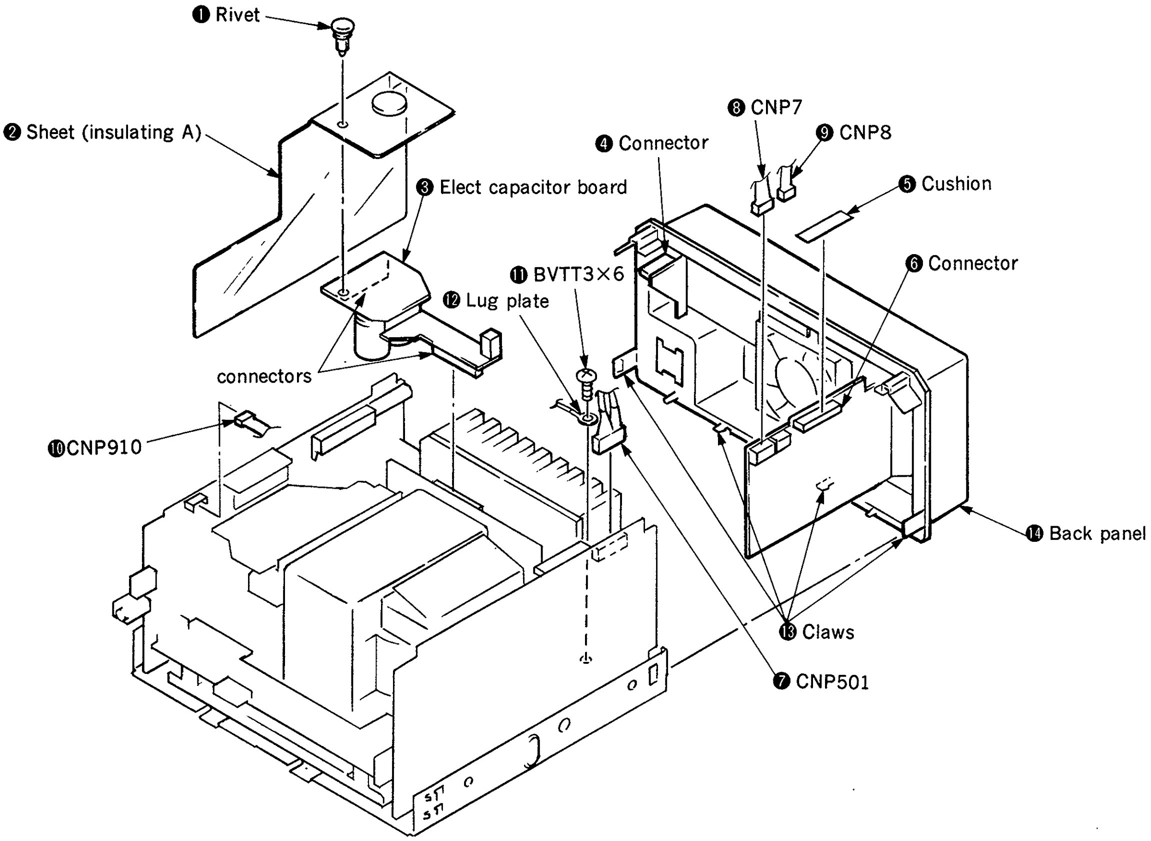
❶ Screws (case +3×8 TP2)
❸ Case
❷ Screws (case +3×8 TP2)
❺ BTP2.6×8
❻ Lug plate
❾ Front panel assy
❽ Claw
❼ Claw
❹ BTP3×8

2-2. PANEL BOARD

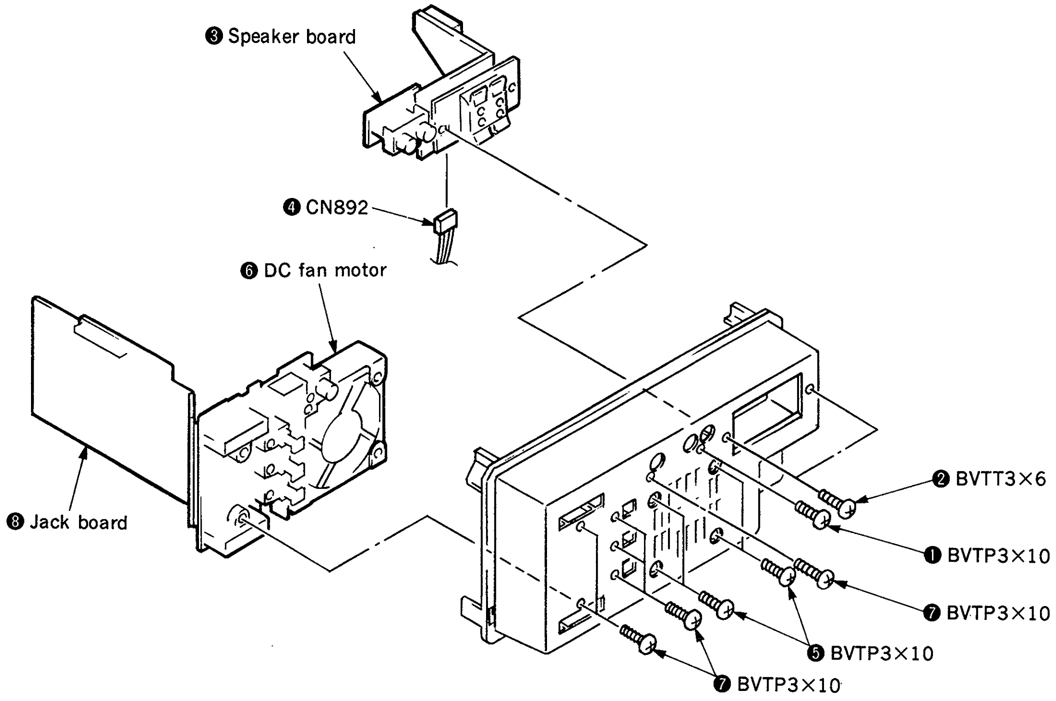


❶ Knob (volume) assy
❷ Nut
❼ Panel board
❻ BVTP2.6×8
❹ BVTP2.6×8
❺ Sheet (insulating-B)
❸ VOL board
❻ BVTP2.6×8

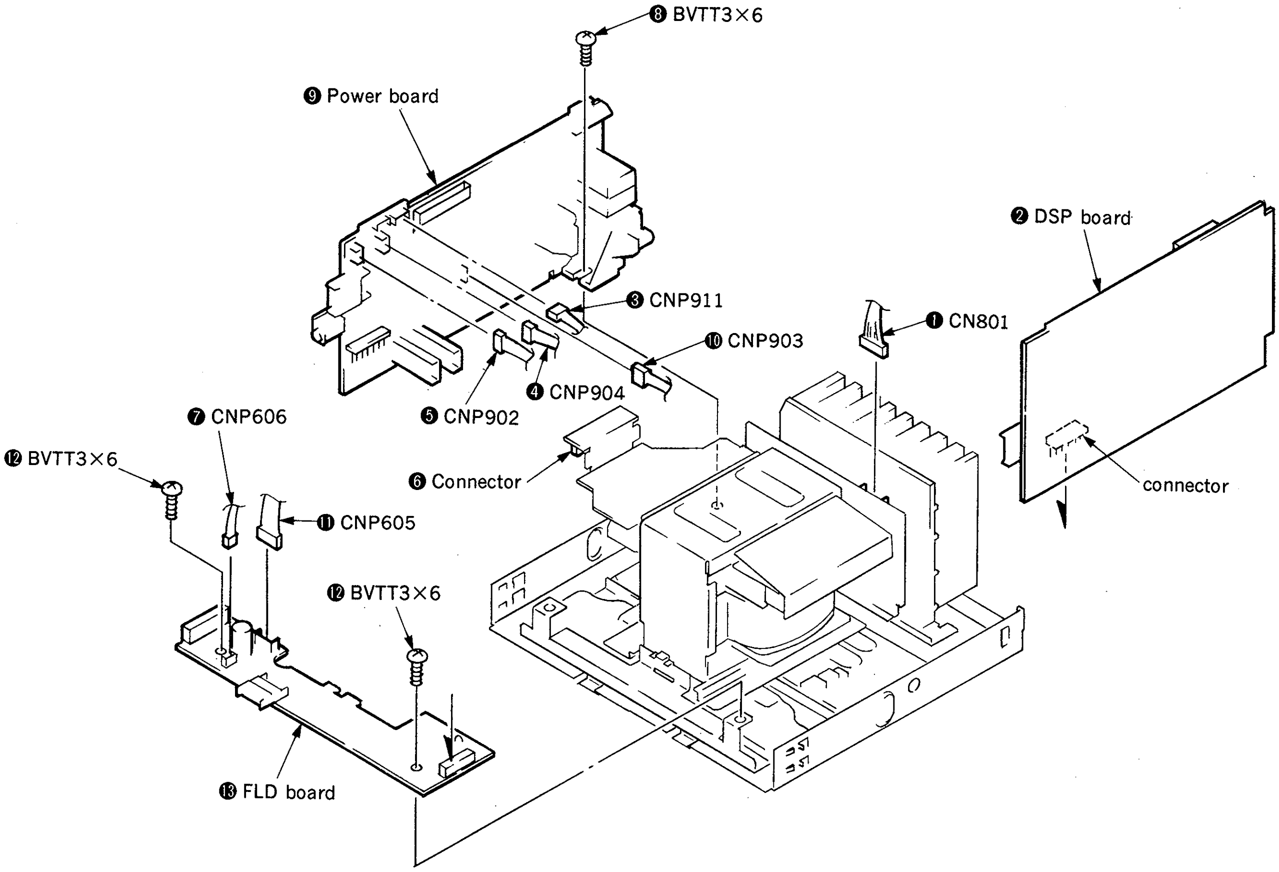
2-3. BACK PANEL


❶ Rivet
❷ Sheet (insulating A)
❸ Elect capacitor board
connectors
❿CNP910
⓫ BVTT3×6
⓬ Lug plate
❹ Connector
❽ CNP7
❾ CNP8
❺ Cushion
❻ Connector
⓮ Back panel
⓭ Claws
❼ CNP501

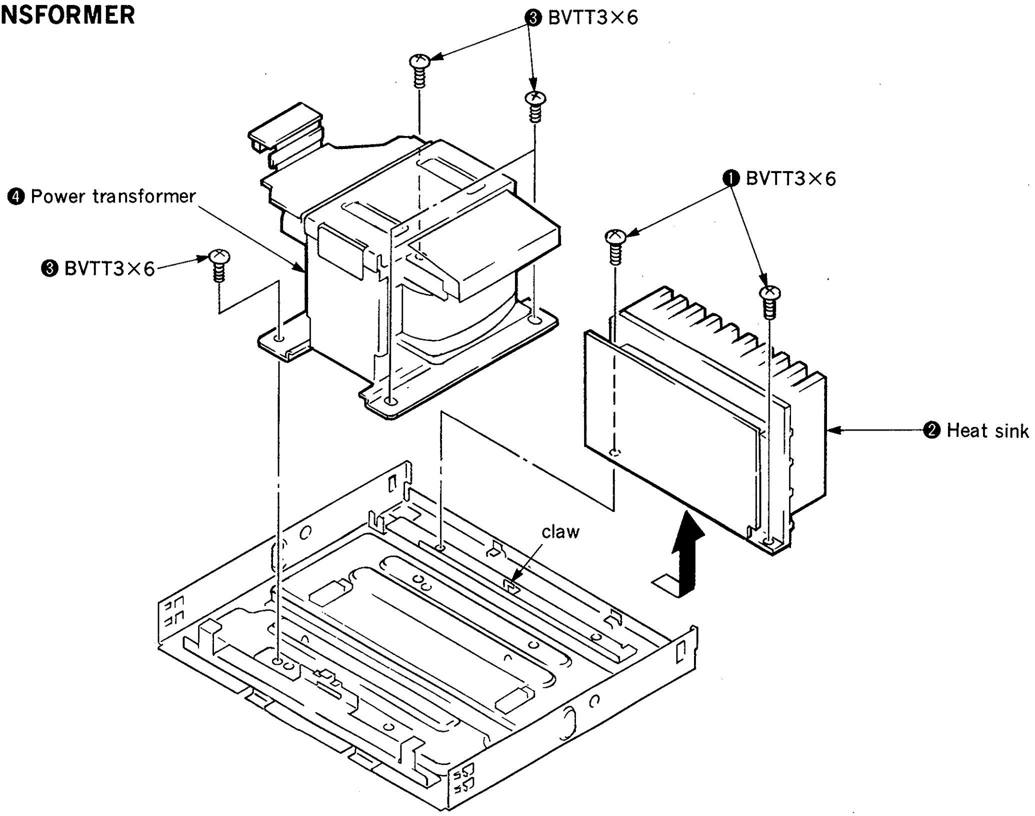
2-4. JACK BOARD, SPEAKER BOARD


❸ Speaker board
❹ CN892
❻ DC fan motor
❽ Jack board
❷ BVTT3×6
❶ BVTP3×10
❼ BVTP3×10
❺ BVTP3×10
❼ BVTP3×10

2-5. POWER BOARD, DSP BOARD

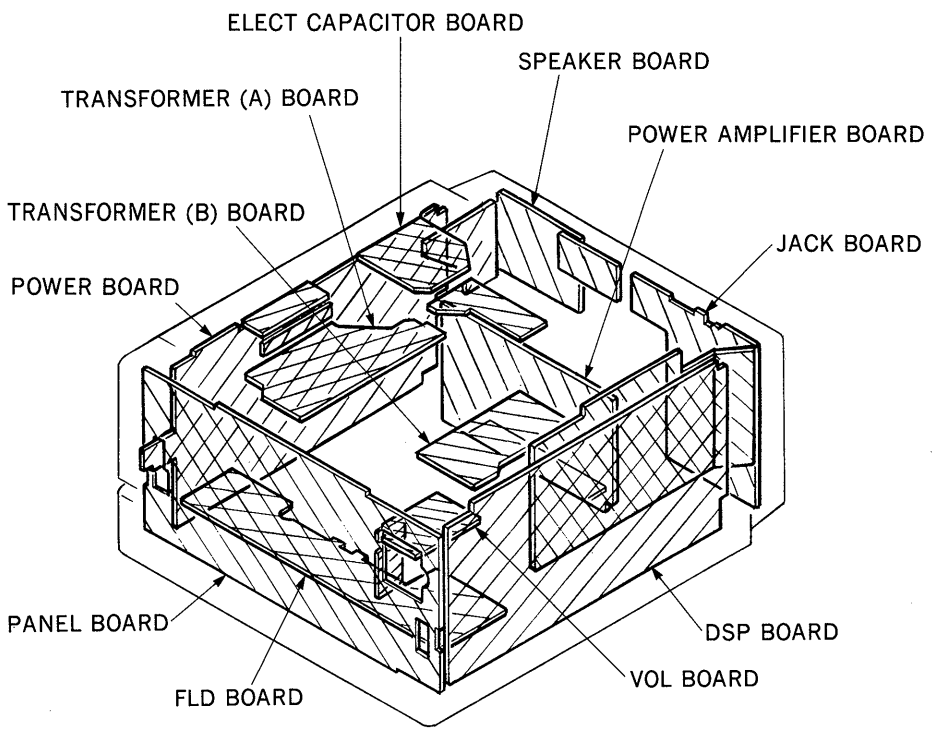

❽ BVTT3×6
❾ Power board
❷ DSP board
❸ CNP911
❶ CN801
❿ CNP903
❹ CNP904
❼ CNP606
❺ CNP902
⓬ BVTT3×6
❻ Connector
connector
⓫ CNP605
⓬ BVTT3×6
⓭ FLD board

2-6. POWER TRANSFORMER

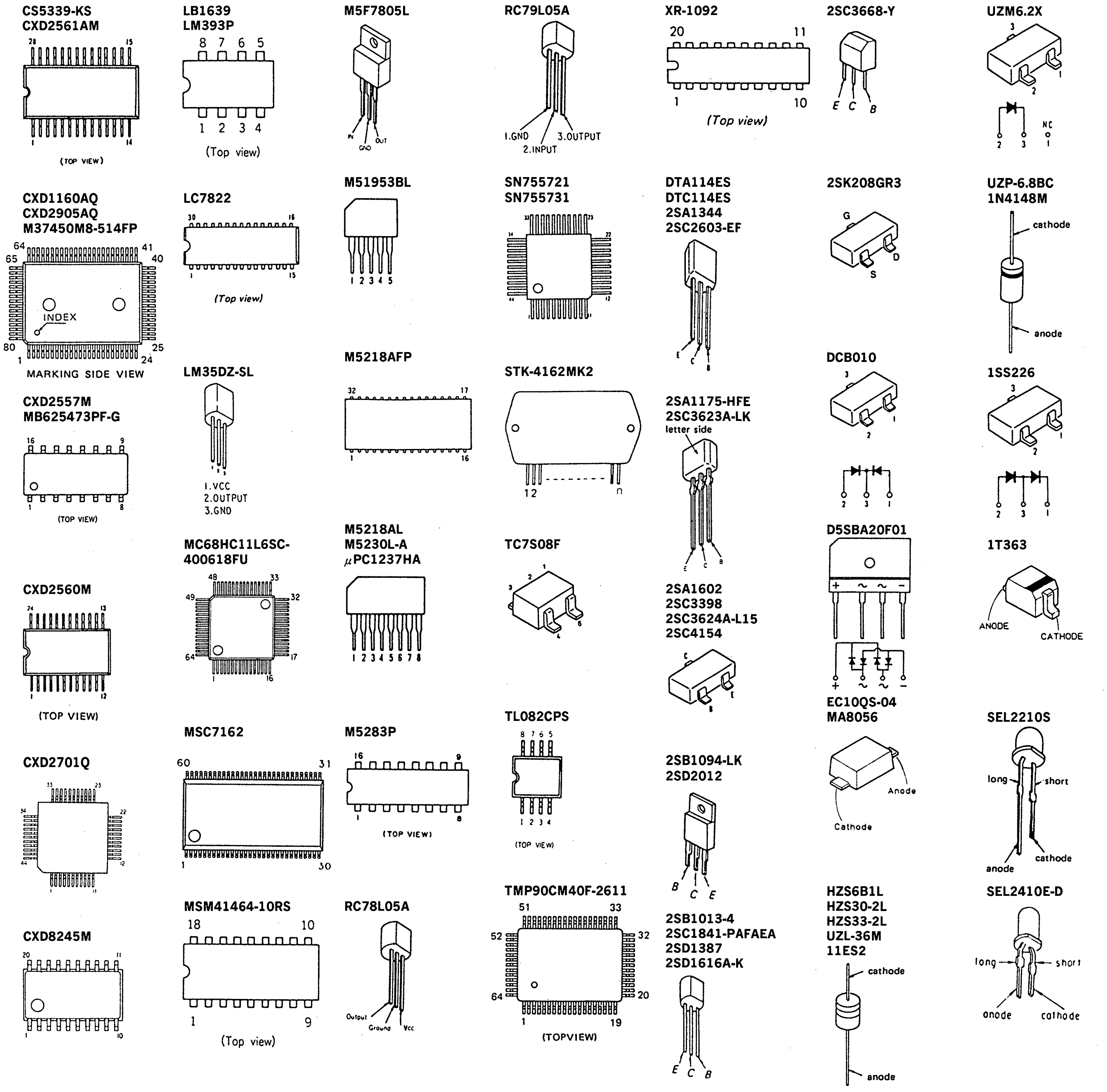

❸ BVTT3×6
❹ Power transformer
❶ BVTT3×6
❸ BVTT3×6
❷ Heat sink
claw

SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION


ELECT CAPACITOR BOARD
SPEAKER BOARD
TRANSFORMER (A) BOARD
POWER AMPLIFIER BOARD
TRANSFORMER (B) BOARD
JACK BOARD
POWER BOARD
PANEL BOARD
DSP BOARD
VOL BOARD
FLD BOARD

3-2. SEMICONDUCTOR LEAD LAYOUTS


(TOP VIEW)
MARKING SIDE VIEW
INDEX
(Top view)
1.VCC
2.OUTPUT
3.GND
IN
GND
OUT
Output
Ground
Vcc
1.GND
2.INPUT
3.OUTPUT
(TOPVIEW)
E C B
letter side
B C E
cathode
anode
NC
ANODE
CATHODE
Anode
Cathode
long
short
+ ~ ~ -

CS5339-KS
CXD2561AM

CXD1160AQ
CXD2905AQ
M37450M8-514FP

CXD2557M
MB625473PF-G

CXD2560M

CXD2701Q

CXD8245M

LB1639
LM393P

LC7822

LM35DZ-SL

MC68HC11L6SC-400618FU

MSC7162

MSM41464-10RS

M5F7805L

M51953BL

M5218AFP

M5218AL
M5230L-A
μPC1237HA

M5283P

RC78L05A

RC79L05A

SN755721
SN755731

STK-4162MK2

TC7S08F

TL082CPS

TMP90CM40F-2611

XR-1092

DTA114ES
DTC114ES
2SA1344
2SC2603-EF

2SA1175-HFE
2SC3623A-LK

2SA1602
2SC3398
2SC3624A-L15
2SC4154

2SB1094-LK
2SD2012

2SB1013-4
2SC1841-PAFAEA
2SD1387
2SD1616A-K

2SC3668-Y

2SK208GR3

DCB010

D5SBA20F01

EC10QS-04
MA8056

HZS6B1L
HZS30-2L
HZS33-2L
UZL-36M
11ES2

UZM6.2X

UZP-6.8BC
1N4148M

1SS226

1T363

SEL2210S

SEL2410E-D

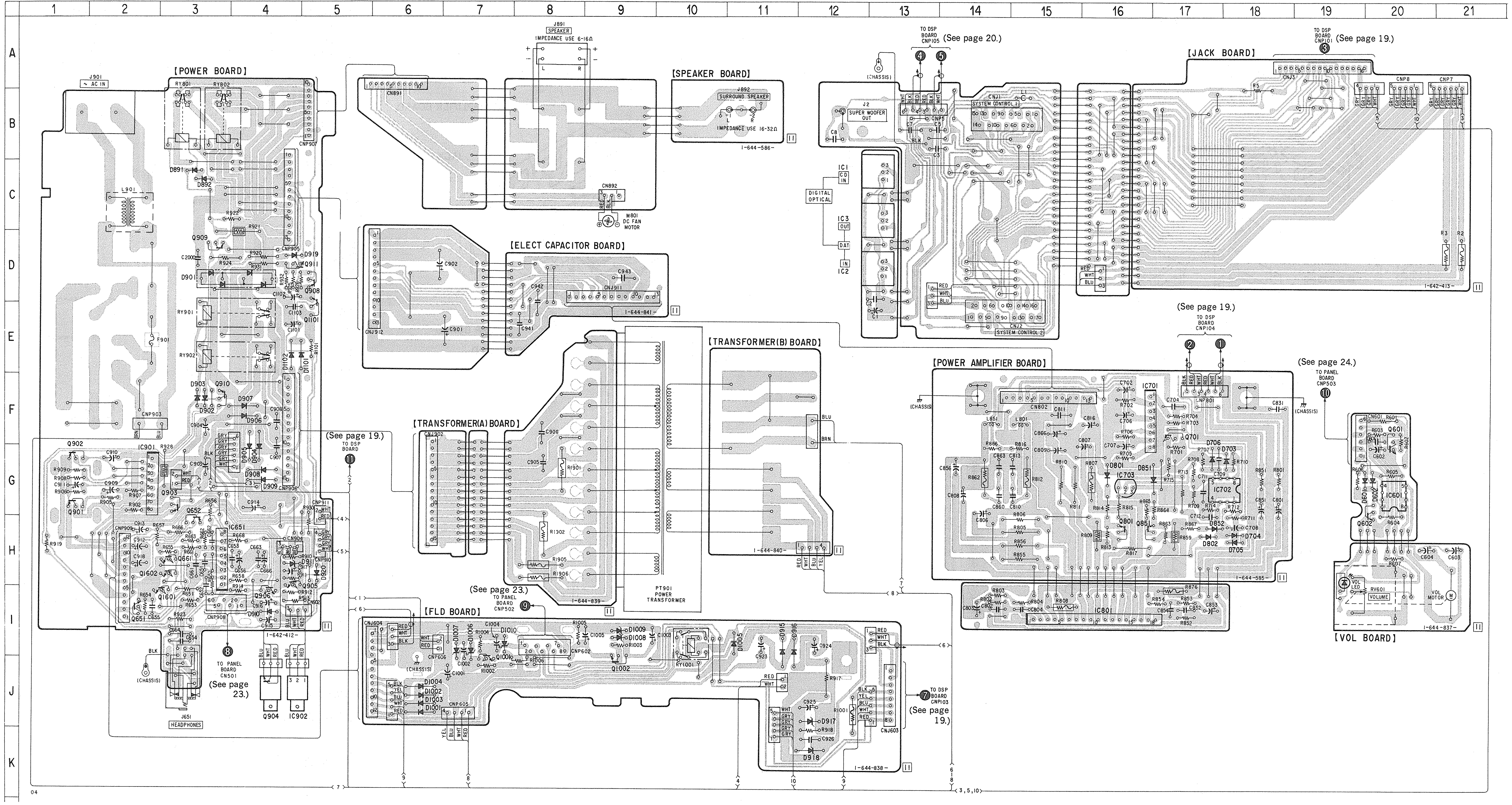
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D601	G-20	IC1	C-13
D602	G-20	IC2	D-13
D703	G-17	IC3	C-13
D704	H-18	IC601	G-20
D705	H-18	IC651	H-3
D706	G-17	IC701	F-16
D801	G-16	IC702	G-17
D802	H-17	IC703	G-16
D851	G-16	IC801	I-16
D852	H-17	IC901	G-2
D891	C-3	IC902	J-4
D892	C-3		
D901	D-3	Q601	F-20
D902	F-3	Q602	G-20
D903	F-3	Q651	I-2
D904	G-4	Q652	H-3
D905	G-4	Q661	H-3
D906	F-4	Q701	F-17
D907	F-4	Q801	H-16
D908	G-4	Q851	H-16
D909	G-4	Q901	G-1
D910	I-4	Q902	G-1
D911	H-4	Q903	G-3
D915	I-11	Q904	J-4
D916	I-11	Q905	H-4
D917	J-12	Q906	H-4
D918	K-12	Q908	D-5
D919	D-5	Q909	D-3
D920	H-5	Q910	F-3
D1001	J-6	Q911	D-5
D1002	J-6	Q1001	J-7
D1003	J-6	Q1002	J-9
D1004	J-6	Q1101	E-5
D1005	I-11	Q1601	I-3
D1006	I-7	Q1602	H-3
D1007	I-7		
D1008	I-9		
D1009	I-9		
D1010	I-7		
D1101	E-4		
D1102	E-4		

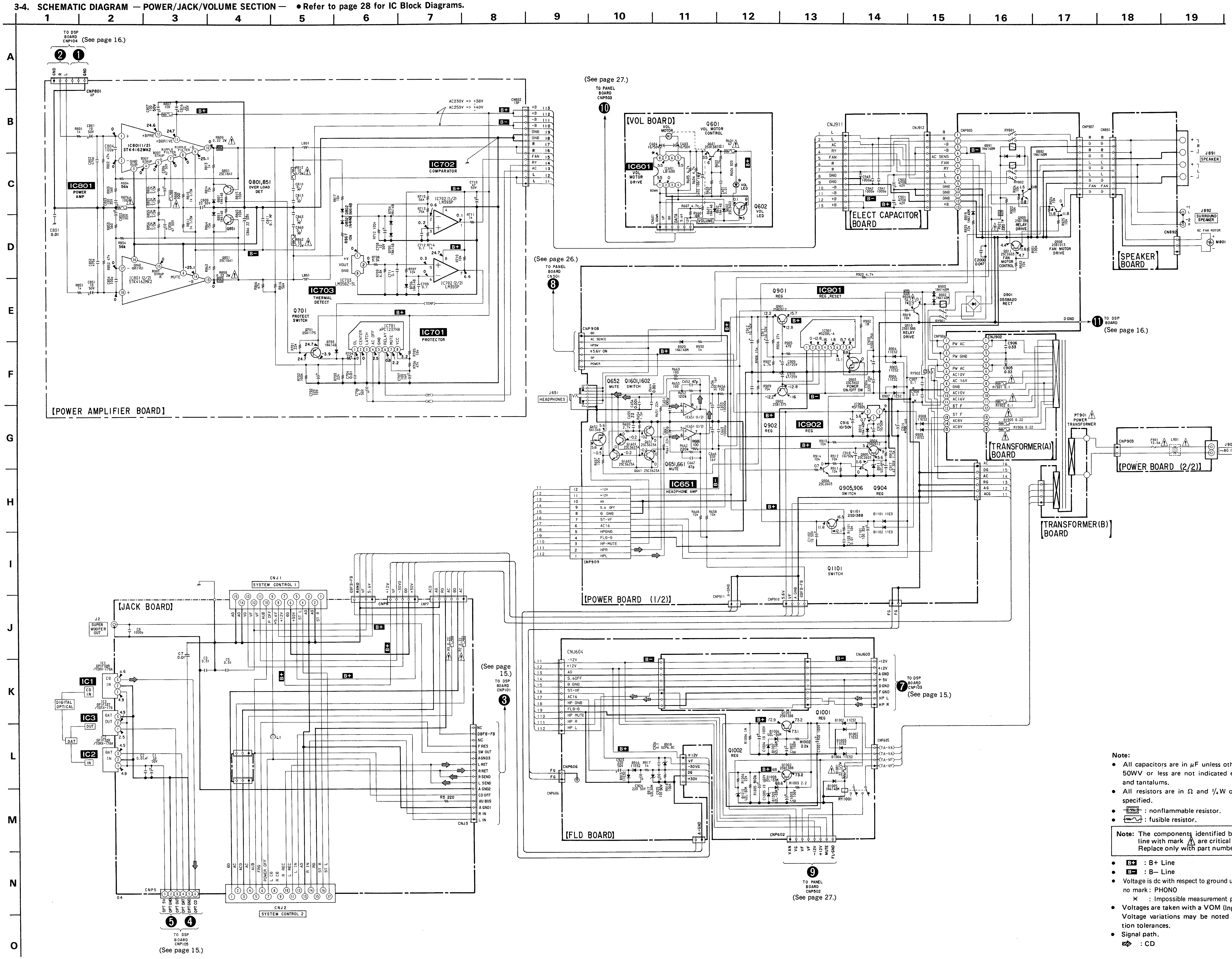
Note:

- o—— : parts extracted from the component side.

3-3. PRINTED WIRING BOARDS — POWER/JACK/VOLUME SECTION — ● Refer to page 6 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
F
G
H
I
J
K
[POWER BOARD]
J901 AC IN
RY801
RY802
L901
F901
RY901
RY902
CNP903
CNP907
IC901
IC651
Q902
Q901
Q903
Q652
Q651
Q1601
Q1602
(See page 19.) TO DSP BOARD ⑪
⑧ TO PANEL BOARD CN501 (See page 23.)
J651 HEADPHONES
(CHASSIS)
Q904
IC902
1-642-412-
J891 SPEAKER IMPEDANCE USE 6-16Ω
CN891
CN892
M801 DC FAN MOTOR
[SPEAKER BOARD]
J892 SURROUND SPEAKER
IMPEDANCE USE 16-32Ω
1-644-586-
[ELECT CAPACITOR BOARD]
CNJ911
CNJ912
C901
C902
1-644-841-
[TRANSFORMER(A) BOARD]
CNJ902
1-644-839-
[TRANSFORMER(B) BOARD]
1-644-840-
PT901 POWER TRANSFORMER
(See page 23.) TO PANEL BOARD CNP502 ⑨
[FLD BOARD]
CNJ604
CNP605
CNP606
CNP602
CNJ603
RY1001
1-644-838-
⑦ TO DSP BOARD CNP103 (See page 19.)
TO DSP BOARD CNP105 (See page 20.) ④ ⑤
(CHASSIS)
J2 SUPER WOOFER OUT
IC1 CD IN
DIGITAL OPTICAL
IC3 OUT
DAT
IN IC2
CNJ1 SYSTEM CONTROL 1
CNJ2 SYSTEM CONTROL 2
[JACK BOARD]
TO DSP BOARD CNP101 (See page 19.) ③
CNJ3
CNP8
CNP7
1-642-413-
(See page 19.) TO DSP BOARD CNP104 ② ①
[POWER AMPLIFIER BOARD]
CNP801
CN802
IC701
IC702
IC703
IC801
Q701
Q801
Q851
1-644-585-
(See page 24.) TO PANEL BOARD CNP503 ⑩
(CHASSIS)
IC601
Q601
Q602
VOL LED
RV601 VOLUME
VOL MOTOR
1-644-837-
[VOL BOARD]

3-4. SCHEMATIC DIAGRAM — POWER/JACK/VOLUME SECTION — • Refer to page 28 for IC Block Diagrams.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A B C D E F G H I J K L M N O
TO DSP BOARD CNP104 (See page 16.)
CNP801
IC801 POWER AMP
IC801(1/2) STK4162MK2
IC801 (2/2) STK4162MK2
Q801,851 OVER LOAD DET
IC702 COMPARATOR
IC702 (1/2) LM393P
IC702 (2/2) LM393P
IC703 THERMAL DETECT
IC703 LM35DZ-SL
Q701 PROTECT SWITCH
IC701 PROTECTOR
IC701 µPC1237HA
AC230V => +38V
AC253V => +40V
[POWER AMPLIFIER BOARD]
(See page 27.)
TO PANEL BOARD CNP503
[VOL BOARD]
Q601 VOL MOTOR CONTROL
IC601 VOL MOTOR DRIVE
Q602 VOL LED
VOLUME
[ELECT CAPACITOR BOARD]
RY801
[SPEAKER BOARD]
J891 SPEAKER
J892 SURROUND SPEAKER
M801
(See page 26.)
TO PANEL BOARD CN501
Q901 REG
IC901 REG,RESET
D901 D5SBA20 RECT
TO DSP BOARD (See page 16.)
CNP908
J651 HEADPHONES
Q652 MUTE
Q601,1602 SWITCH
Q651,661 MUTE
IC651 HEADPHONE AMP
Q902 REG
IC902 REG
Q905,906 SWITCH
Q904 REG
Q1101 SWITCH
CNP909
[POWER BOARD (1/2)]
[TRANSFORMER(A) BOARD]
PT901 POWER TRANSFORMER
[TRANSFORMER(B) BOARD]
J901 AC IN
[POWER BOARD (2/2)]
[JACK BOARD]
CNJ1 SYSTEM CONTROL 1
J2 SUPER WOOFER OUT
IC1 CD IN
IC3 OUT
IC2 IN
DIGITAL OPTICAL
DAT
(See page 15.) TO DSP BOARD CNP101
CNJ3
CNP5
CNJ2 SYSTEM CONTROL 2
TO DSP BOARD CNP105 (See page 15.)
CNJ604
CNJ603
TO DSP BOARD CNP103 (See page 15.)
Q1001 REG
Q1002 REG
RY1001
[FLD BOARD]
CNP602
TO PANEL BOARD CNP502 (See page 27.)

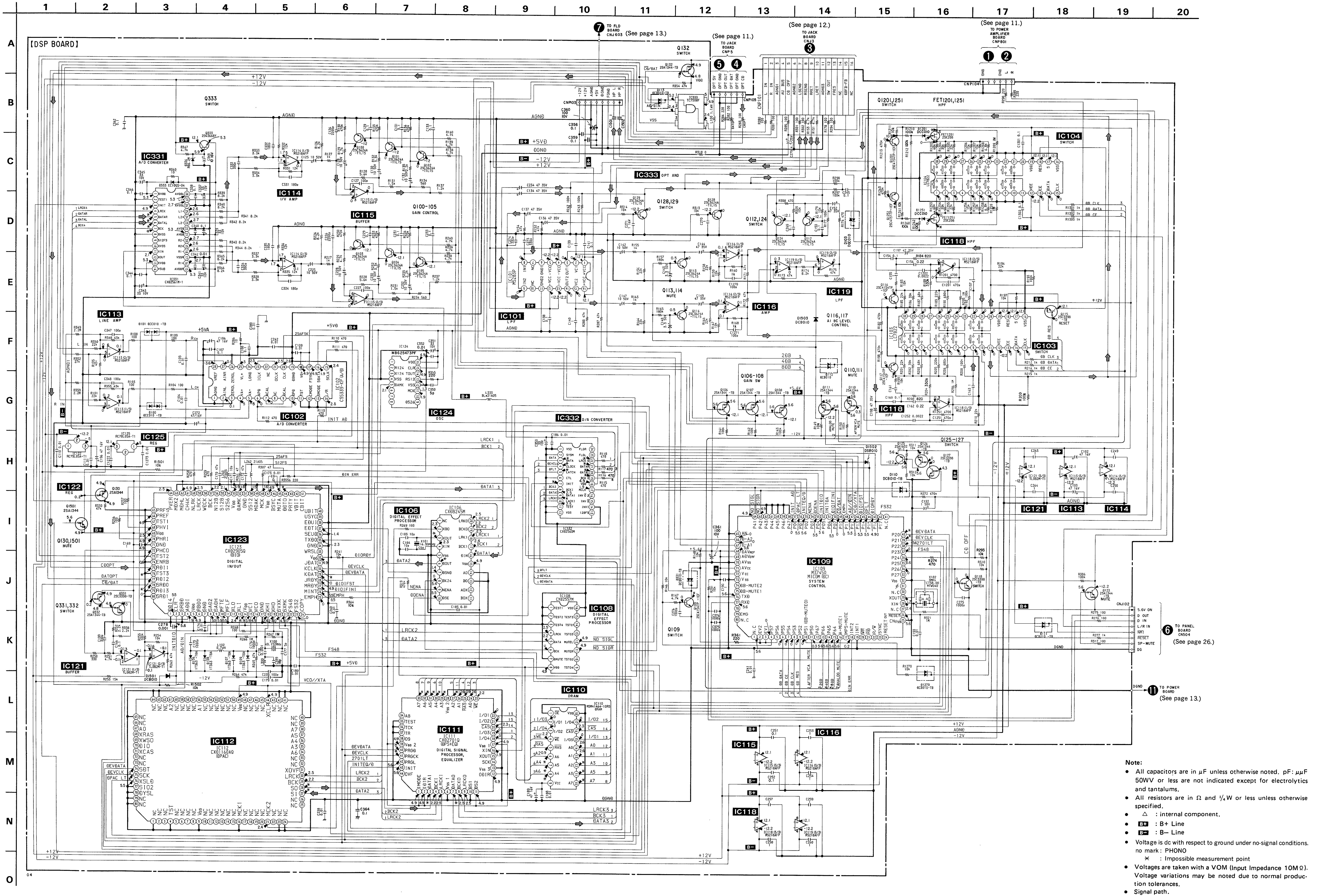
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $^1/_4$W or less unless otherwise specified.
- ▭ : nonflammable resistor.
- ⏛ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line
- B− : B– Line
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PHONO
  × : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD

3-5. SCHEMATIC DIAGRAM — DSP SECTION —


[DSP BOARD]
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J K L M N O
⑦ TO FLD BOARD CNJ603 (See page 13.)
(See page 11.) TO JACK BOARD CNP5 ⑤ ④
(See page 12.) TO JACK BOARD CNJ3 ③
(See page 11.) TO POWER AMPLIFIER BOARD CNP801 ① ②
⑥ TO PANEL BOARD CN504 (See page 26.)
⑪ TO POWER BOARD (See page 13.)
IC331 A/D CONVERTER
IC114 I/V AMP
IC115 BUFFER
Q100-105 GAIN CONTROL
Q333 SWITCH
Q132 SWITCH
IC333 OPT AND
Q128,129 SWITCH
Q112,124 SWITCH
Q113,114 MUTE
IC101 LPF
IC116 AMP
IC119 LPF
Q116,117 AI BC LEVEL CONTROL
D1503 DCBO1D
Q1201,1251 SWITCH
FET1201,1251 HPF
IC104 SWITCH
IC118 HPF
IC103 SWITCH
Q115 RESET
IC113 LINE AMP
IC102 A/D CONVERTER
IC124 OSC
Q106-108 GAIN SW
Q110,111 MUTE
IC125 REG
IC332 D/A CONVERTER
Q125-127 SWITCH
IC122 REG
Q130,1501 MUTE
IC123 CXD2051Q DIGITAL IN/OUT
IC106 DIGITAL EFFECT PROCESSOR
IC109 M37450 MICON (DC) SYSTEM CONTROL
Q118 SWITCH
Q119 MUTE
Q109 SWITCH
Q331,332 SWITCH
IC108 CXD2557M DIGITAL EFFECT PROCESSOR
IC121 BUFFER
IC121 IC113 IC114
IC110 DRAM
IC112 CXD1160AQ (DPAC)
IC111 CXD2701Q DIGITAL SIGNAL PROCESSOR, EQUALIZER
IC115 IC116 IC118
+12V -12V +5VD +5VA DGND AGND
CNP103 CNP105 CNP101 CNP104 CNJ102
5.6V ON D OUT D IN L/R IN NRI RESET SP-MUTE DG
04

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- B− : B− Line
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PHONO
  ✕ : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD

3-6. PRINTED WIRING BOARD — DSP SECTION — • Refer to page 6 for Semiconductor Lead Layouts.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
[DSP BOARD] (COMPONENT SIDE)
[DSP BOARD] (CONDUCTOR SIDE)
(See page 10.)
TO POWER AMPLIFIER BOARD CNP801
①
②
(See page 10.)
TO JACK BOARD CNJ3
③
(See page 10.)
TO JACK BOARD CNP5
④
⑤
TO PANEL BOARD CN504
⑥
(See page 24.)
⑦
TO FLD BOARD CNJ603
(See page 10.)
⑪
TO POWER BOARD
(See page 9.)
CNP101
CNP103
CNP104
CNP105
CNJ102
BLK
WHT
RED
(CHASSIS)
IC101
IC102
IC103
IC104
IC106
IC108
IC109
IC110
IC111
IC112
IC114
IC115
IC116
IC118
IC119
IC121
IC123
IC124
IC125
IC331
IC332
IC333
1-642-536-
11
04

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D100	C-23	IC123	D-3
D101	C-23	IC124	C-21
D103	G-13	IC125	D-23
D106	E-3	IC331	D-5
D107	E-3	IC332	E-5
D108	E-3	IC333	D-4
D109	E-3		
D110	F-18	Q100	E-6
D111	G-16	Q101	E-6
D112	G-8	Q102	D-6
D113	D-4	Q103	E-18
D331	G-16	Q104	D-18
D333	D-19	Q105	D-18
D334	C-20	Q106	E-18
D1201	C-11	Q107	E-18
D1251	D-10	Q108	E-18
D1270	G-9	Q109	G-16
D1501	E-3	Q110	G-8
D1502	G-16	Q111	G-8
D1503	F-18	Q112	D-9
		Q113	E-16
FET1201	C-11	Q114	E-16
FET1251	D-10	Q115	B-10
		Q116	C-9
IC101	D-16	Q117	D-15
IC102	F-1	Q118	E-7
IC103	C-14	Q123	G-13
IC104	D-14	Q124	E-16
IC106	F-5	Q125	F-17
IC108	G-5	Q126	F-17
IC109	F-7	Q127	F-17
IC110	G-21	Q128	B-18
IC111	F-3	Q129	B-17
IC112	F-21	Q130	D-20
IC113	C-23	Q132	D-4
IC114	C-18	Q331	D-4
IC115	D-17	Q332	D-4
IC116	F-9	Q333	C-20
IC118	D-15	Q1201	D-11
IC119	E-9	Q1251	D-11
IC121	C-2	Q1501	C-4
IC122	D-23		

Note:
- o—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers'patterns are not indicated.)

Caution:

Pattern face side: (Conductor side)	Parts on the pattern face side seen from the pattern face are indecated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indecated.

• Semiconductor Location

Ref. No.	Location
D501	F-11
D502	F-13
D503	F-12
D504	C-22
D505	C-20
D506	C-19
D507	C-18
D508	C-17
D509	C-15
D510	F-15
D511	C-21
D512	C-19
D514	C-17
D515	C-16
D521	C-20
D522	B-17
D523	B-25
IC501	D-20
IC502	E-21
IC503	F-20
IC504	D-18
IC505	F-18
IC506	E-17
IC507	E-15
IC508	C-3
IC509	D-24
Q501	F-13
Q502	F-11
Q503	F-12
Q504	F-11
Q505	F-11
Q506	F-15
Q507	E-11
Q508	C-5
Q509	C-7
Q510	C-8
Q511	C-9
Q512	C-11
Q513	C-11
Q514	C-11
Q515	C-19
Q516	C-19
Q517	C-19

3-7. PRINTED WIRING BOARD — PANEL SECTION —

• Refer to page 6 for Semiconductor Lead Layouts.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
A B C D E F G
[PANEL BOARD] (COMPONENT SIDE)
[PANEL BOARD] (CONDUCTOR SIDE)
IC508
Q508
Q509
Q510
Q511
Q512
Q513
Q514
Q507
Q504
Q503
Q505
Q502
Q501
D501
D502
D503
04
1-642-535-
S505 BALANCE
S503 DSP
ON/OFF
S506 PRESET
S508 DYNAMIC SOUND
S507 PARAMETRIC EQUALIZER
S509 PRESENCE SURROUND
S511 A/B/C
S510 ON/OFF
S515
S517 VIDEO
FUNCTION
S518 AUDIO
S516
S514
S512 MEMORY
CURSOR CONTROL
S504 WAKE UP VOL-SET
S502 DISPLAY
TO FLD BOARD CNP602 ⑨ (See page 9.)
D522
D521
Q515
Q517
Q516
D508
D515
D514
D507
D506 TAPE
D512 DAT
D505 CD
D511 TUNER
D504 PHONO
VIDEO 1
VIDEO 2
D509
FL501 FLUORESCENT INDICATOR TUBE
IC504
IC501
IC506
IC502
IC505
IC503
IC507
IC509
D523
D510
Q506
S501 SYSTEM POWER ON/STANDBY
CN501
CNP503
CN504
TO POWER BOARD CNP908 ⑧ (See page 9.)
TO DSP BOARD CNJ102 ⑥ (See page 18.)
TO VOL BOARD CN601 ⑩ (See page 10.)

Note:

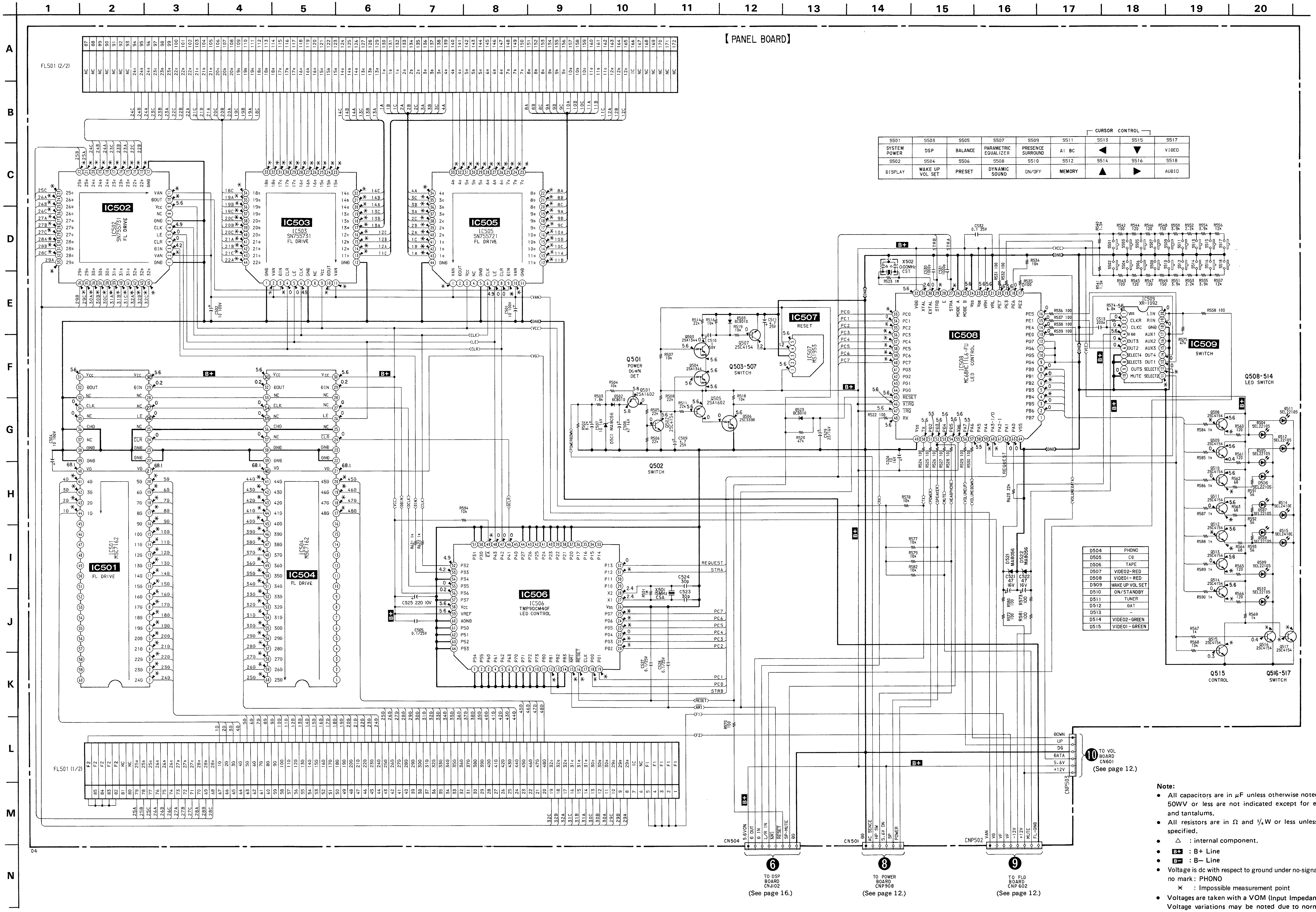
• ● : Through hole.

• ▨ : Pattern from the side which enables seeing.

(The other layers'patterns are not indicated.)

Caution:	
Pattern face side: (Conductor side)	Parts on the pattern face side seen from the pattern face are indecated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indecated.

3-8. SCHEMATIC DIAGRAM — PANEL SECTION —


【PANEL BOARD】
FL501 (2/2)
FL501 (1/2)
IC501 M5C7162 FL DRIVE
IC502 SN755721 FL DRIVE
IC503 SN755721 FL DRIVE
IC504 M5C7162 FL DRIVE
IC505 SN755721 FL DRIVE
IC506 TMP90CM40F LED CONTROL
IC507 M51953 RESET
IC508 MC68HC11E-FU LED CONTROL
IC509 XR-1092 SWITCH
Q501 POWER DOWN DET
Q502 SWITCH
Q503-507 SWITCH
Q508-514 LED SWITCH
Q515 CONTROL
Q516-517 SWITCH
X501 15MHz CSA
X502 0.00MHz CST
B+
CN504
6 TO DSP BOARD CNJ102 (See page 16.)
CN501
8 TO POWER BOARD CNP908 (See page 12.)
CNP502
9 TO FLD BOARD CNP602 (See page 12.)
CNP503
10 TO VOL BOARD CN601 (See page 12.)
04

S501	S503	S505	S507	S509	S511	S513	S515	S517
SYSTEM POWER	DSP	BALANCE	PARAMETRIC EQUALIZER	PRESENCE SURROUND	AI BC	◀	▼	VIDEO
S502	S504	S506	S508	S510	S512	S514	S516	S518
DISPLAY	WAKE UP VOL SET	PRESET	DYNAMIC SOUND	ON/OFF	MEMORY	▲	▶	AUDIO

CURSOR CONTROL (S513–S516)

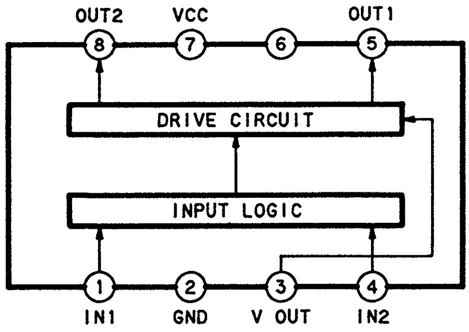
D504	PHONO
D505	CD
D506	TAPE
D507	VIDEO2-RED
D508	VIDEO1-RED
D509	WAKE UP VOL SET
D510	ON/STANDBY
D511	TUNER
D512	DAT
D513	-
D514	VIDEO2-GREEN
D515	VIDEO1-GREEN

Note:

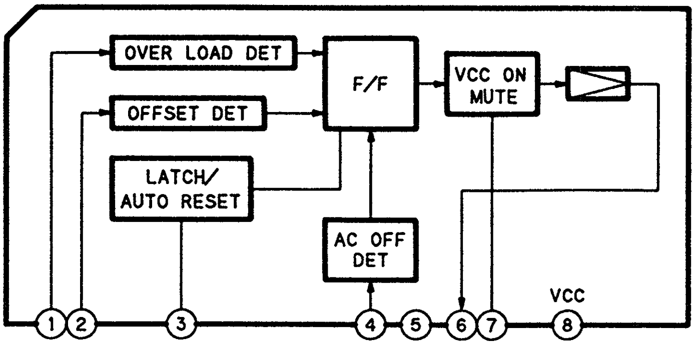
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- B– : B– Line
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PHONO
  ✳ : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

• IC Block Diagrams

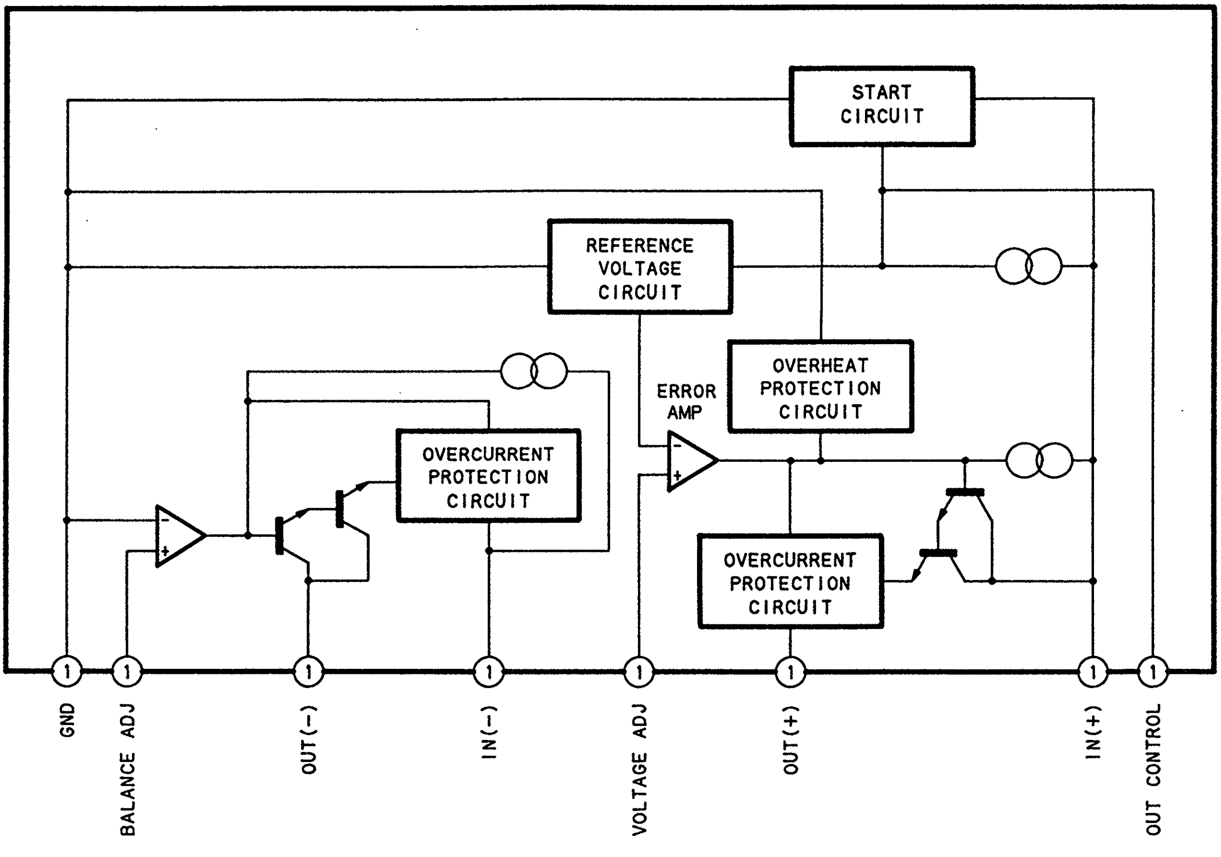
IC601 LB1639


OUT2
VCC
OUT1
8
7
6
5
DRIVE CIRCUIT
INPUT LOGIC
1
2
3
4
IN1
GND
V OUT
IN2

IC701 μPC1237HA


OVER LOAD DET
OFFSET DET
F/F
VCC ON MUTE
LATCH/ AUTO RESET
AC OFF DET
VCC
1
2
3
4
5
6
7
8

IC901 M5230L-A


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
OVERCURRENT PROTECTION CIRCUIT
1
1
1
1
1
1
1
1
GND
BALANCE ADJ
OUT(−)
IN(−)
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL

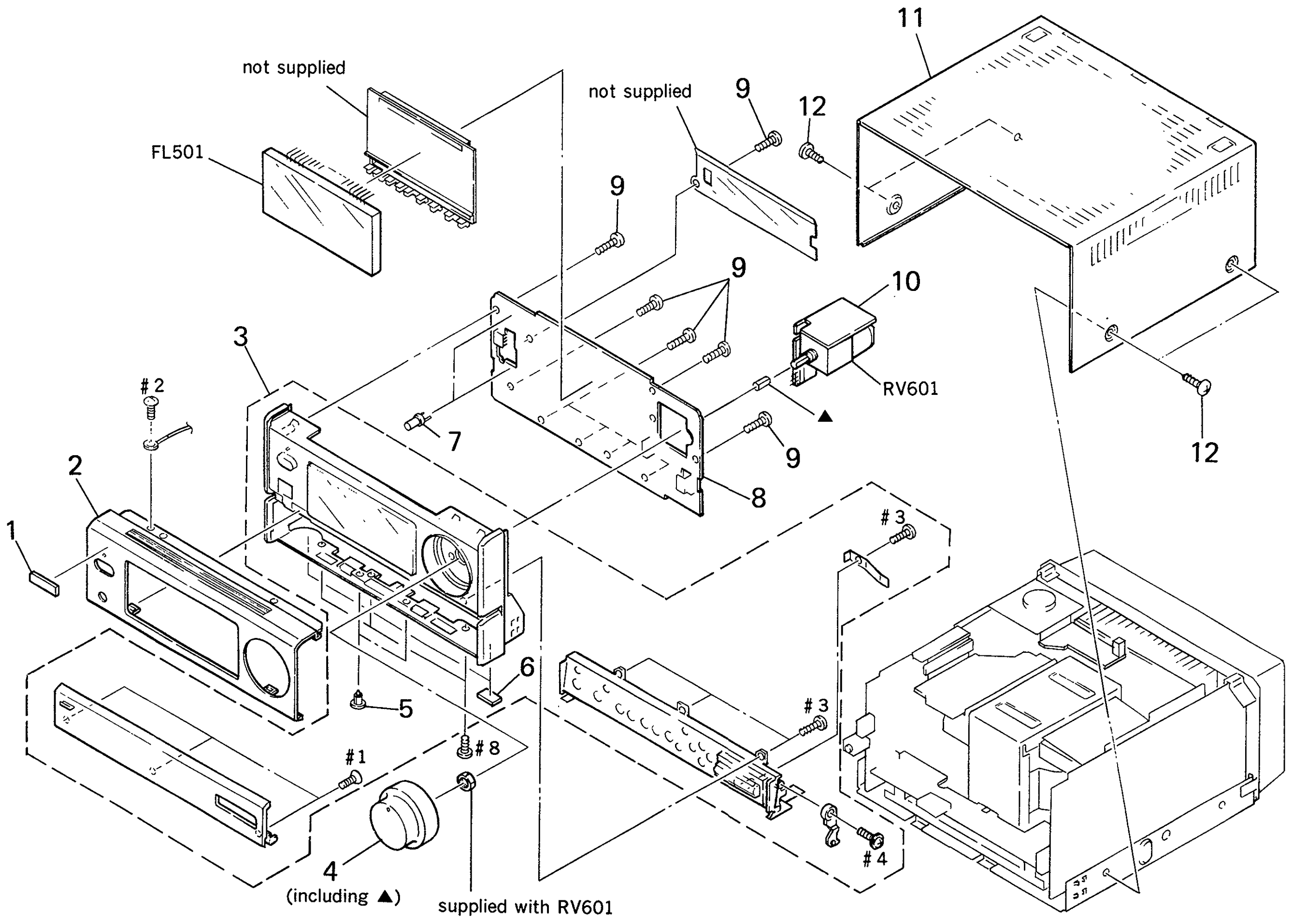
SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

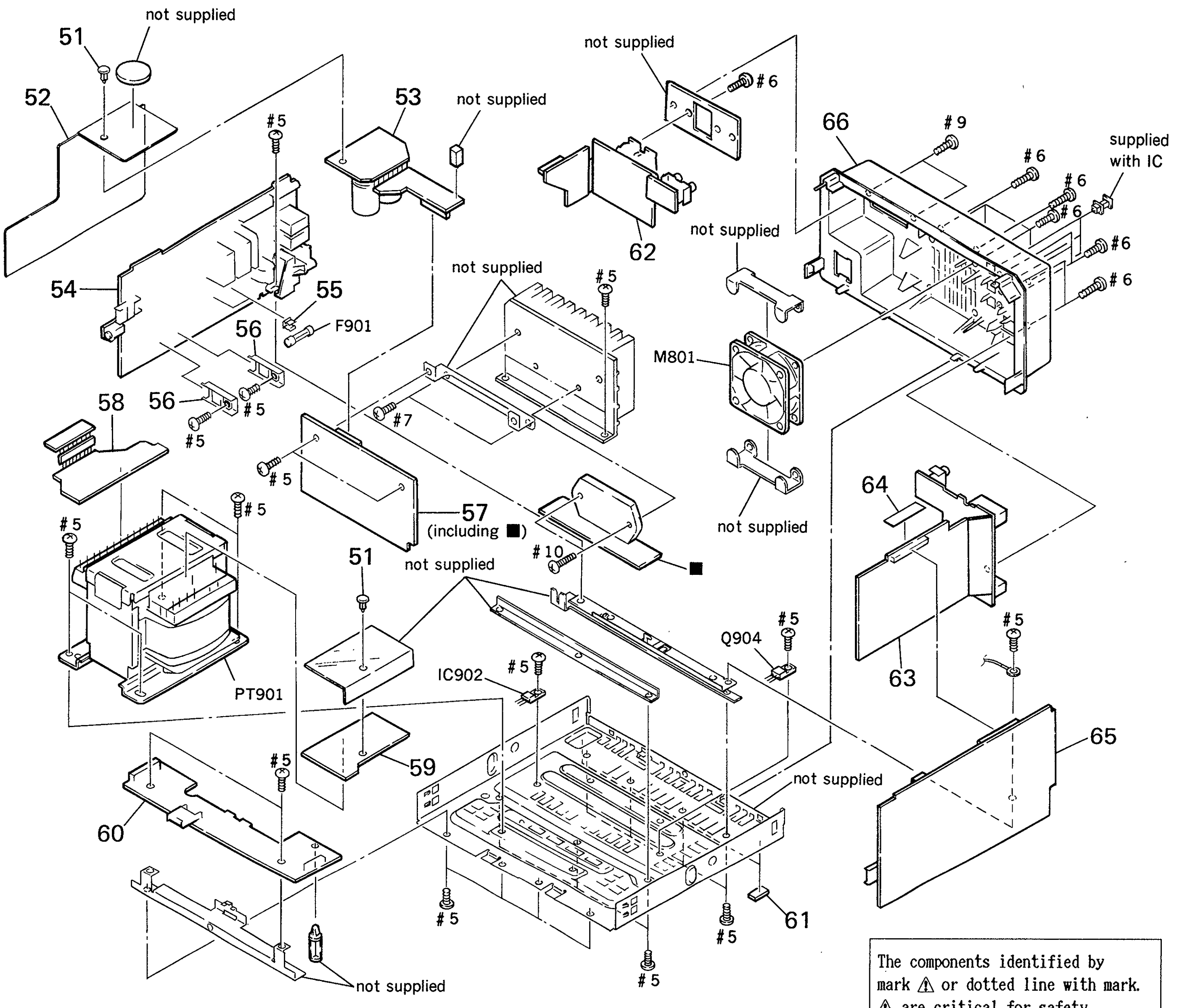
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

4-1. FRONT PANEL ASSY



Ref. No.	Part No.	Description	Remark
1	4-942-636-11	EMBLEM (NO. 3. 5), SONY	
2	X-4942-476-2	PANEL ASSY, FRONT	
3	X-4942-716-1	PANEL (BASE) ASSY	
4	X-4942-478-1	KNOB (VOLUME) ASSY	
5	4-812-134-00	RIVET NYLON, 3. 5	
6	4-930-336-21	FOOT (FELT)	
* 7	3-362-478-21	HOLDER (T), LED	
* 8	A-4347-015-A	PANEL BOARD, COMPLETE	
9	4-928-635-01	SCREW, +BV (2. 6X8) TAPPING	
* 10	1-644-837-11	VOL BOARD	
* 11	4-932-841-71	CASE	
12	3-363-099-01	SCREW (CASE +3X8 TP2)	
FL501	1-519-654-11	INDICATOR TUBE, FLUORESCENT	
RV601	1-241-803-11	RES, VAR, CARBON (WITH MOTOR) 10K (VOLUME)	

4-2. CHASSIS SECTION


51
not supplied
52
#5
53
not supplied
not supplied
#6
66
#9
#6
#6
#6
supplied with IC
#6
#6
62
not supplied
54
55
F901
not supplied
#5
56
M801
58
56
#5
#5
#7
#5
#5
57
(including ■)
64
#5
51
not supplied
#10
■
not supplied
PT901
Q904
#5
#5
IC902
#5
63
65
#5
59
not supplied
60
#5
#5
61
#5
not supplied

The components identified by
mark ⚠ or dotted line with mark
⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
51	4-812-134-11	RIVET NYLON, 3.5	
* 52	4-945-055-11	SHEET (INSULATING A)	
* 53	1-644-841-11	ELECT CAPACITOR BOARD	
* 54	A-4356-274-A	POWER BOARD, COMPLETE	
* 55	1-533-213-31	HOLDER, FUSE	
* 56	3-309-144-21	HEAT SINK	
* 57	A-4356-052-A	POWER AMPLIFIER BOARD, COMPLETE	
* 58	1-644-839-11	TRANSFORMER (A) BOARD	
* 59	1-644-840-11	TRANSFORMER (B) BOARD	
* 60	A-4356-256-A	FLD BOARD, COMPLETE	
61	4-930-336-21	FOOT (FELT)	

Ref. No.	Part No.	Description	Remark
* 62	1-644-586-11	SPEAKER BOARD	
* 63	1-642-413-11	JACK BOARD	
64	4-860-518-00	CUSHION	
* 65	A-4356-275-A	DSP BOARD, COMPLETE	
* 66	4-948-766-61	PANEL, BACK	
⚠F901	1-532-286-00	FUSE, TIME-LAG (T2.5A)	
IC902	8-759-231-53	IC TA7805S	
M801	1-541-860-11	MOTOR, DC FAN	
⚠PT901	1-450-977-11	TRANSFORMER, POWER (AEP)	
⚠PT901	1-450-978-11	TRANSFORMER, POWER (UK)	
Q904	8-729-209-15	TRANSISTOR 2SD2012	

SECTION 5
ELECTRICAL PARTS LIST

DSP **PANEL**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-4356-275-A	DSP BOARD, COMPLETE			
		*******************			
*	A-4347-015-A	PANEL BOARD, COMPLETE			
		*********************			
*	3-362-478-21	HOLDER (T), LED			
		< CAPACITOR >			
C102	1-124-589-11	ELECT	47uF	20%	16V
C103	1-124-589-11	ELECT	47uF	20%	16V
C104	1-136-153-00	FILM	0.01uF	5%	50V
C105	1-136-153-00	FILM	0.01uF	5%	50V
C106	1-124-589-11	ELECT	47uF	20%	16V
C107	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C125	1-124-915-11	ELECT	10uF	20%	63V
C126	1-130-475-00	MYLAR	0.0022uF	5%	50V
C127	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C128	1-124-915-11	ELECT	10uF	20%	63V
C129	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C130	1-124-915-11	ELECT	10uF	20%	63V
C131	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C132	1-124-915-11	ELECT	10uF	20%	63V
C133	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C134	1-126-947-11	ELECT	47uF	20%	35V
C136	1-126-947-11	ELECT	47uF	20%	35V
C137	1-126-947-11	ELECT	47uF	20%	35V
C138	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C139	1-164-346-11	CERAMIC CHIP	1uF		16V
C140	1-164-346-11	CERAMIC CHIP	1uF		16V
C141	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C142	1-124-915-11	ELECT	10uF	20%	63V
C143	1-126-162-11	ELECT	3.3uF	20%	50V
C144	1-126-947-11	ELECT	47uF	20%	35V
C147	1-124-915-11	ELECT	10uF	20%	63V
C148	1-126-162-11	ELECT	3.3uF	20%	50V
C149	1-126-947-11	ELECT	47uF	20%	35V
C152	1-126-947-11	ELECT	47uF	20%	35V
C153	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C154	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C155	1-164-346-11	CERAMIC CHIP	1uF		16V
C156	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C157	1-164-346-11	CERAMIC CHIP	1uF		16V
C160	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C161	1-164-346-11	CERAMIC CHIP	1uF		16V
C162	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C163	1-164-346-11	CERAMIC CHIP	1uF		16V
C166	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C169	1-164-346-11	CERAMIC CHIP	1uF		16V
C170	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C171	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C172	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C173	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C174	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C175	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C176	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C178	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C179	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C180	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C183	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C184	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C185	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C186	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C187	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C188	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C189	1-124-589-11	ELECT	47uF	20%	16V
C190	1-164-346-11	CERAMIC CHIP	1uF		16V
C192	1-124-902-00	ELECT	0.47uF	20%	50V
C193	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C196	1-124-589-11	ELECT	47uF	20%	16V
C197	1-126-947-11	ELECT	47uF	20%	35V
C198	1-126-947-11	ELECT	47uF	20%	35V
C199	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C225	1-124-915-11	ELECT	10uF	20%	63V
C226	1-130-475-00	MYLAR	0.0022uF	5%	50V
C227	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C228	1-124-915-11	ELECT	10uF	20%	63V

DSP **PANEL**

Ref. No.	Part No.	Description				Remark
C229	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C230	1-124-915-11	ELECT	10uF	20%	63V	
C231	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C232	1-124-915-11	ELECT	10uF	20%	63V	
C233	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C234	1-126-947-11	ELECT	47uF	20%	35V	
C238	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C239	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C240	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C241	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C245	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C249	1-164-346-11	CERAMIC CHIP	1uF		16V	
C250	1-164-346-11	CERAMIC CHIP	1uF		16V	
C251	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C252	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C253	1-164-346-11	CERAMIC CHIP	1uF		16V	
C254	1-164-346-11	CERAMIC CHIP	1uF		16V	
C257	1-164-346-11	CERAMIC CHIP	1uF		16V	
C258	1-164-346-11	CERAMIC CHIP	1uF		16V	
C259	1-164-346-11	CERAMIC CHIP	1uF		16V	
C260	1-164-346-11	CERAMIC CHIP	1uF		16V	
C263	1-164-346-11	CERAMIC CHIP	1uF		16V	
C264	1-164-346-11	CERAMIC CHIP	1uF		16V	
C269	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C270	1-164-346-11	CERAMIC CHIP	1uF		16V	
C271	1-164-346-11	CERAMIC CHIP	1uF		16V	
C272	1-124-589-11	ELECT	47uF	20%	16V	
C273	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C274	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C275	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C276	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C278	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C279	1-126-163-11	ELECT	4.7uF	20%	50V	
C280	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C331	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C332	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C333	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C334	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C335	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C336	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C337	1-124-229-00	ELECT	33uF	20%	10V	
C338	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C339	1-124-229-00	ELECT	33uF	20%	10V	
C340	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C341	1-124-229-00	ELECT	33uF	20%	10V	
C342	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C343	1-124-229-00	ELECT	33uF	20%	10V	
C344	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C345	1-124-229-00	ELECT	33uF	20%	10V	

Ref. No.	Part No.	Description				Remark
C346	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C347	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C348	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C349	1-126-157-11	ELECT	10uF	20%	16V	
C350	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V	
C352	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C353	1-124-229-00	ELECT	33uF	20%	10V	
C356	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C359	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C360	1-124-443-00	ELECT	100uF	20%	10V	
C361	1-124-443-00	ELECT	100uF	20%	10V	
C362	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C364	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C375	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C376	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C389	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C501	1-124-667-11	ELECT	10uF	20%	100V	
C502	1-124-667-11	ELECT	10uF	20%	100V	
C504	1-124-667-11	ELECT	10uF	20%	100V	
C505	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C507	1-126-157-11	ELECT	10uF	20%	16V	
C508	1-124-589-11	ELECT	47uF	20%	16V	
C509	1-126-163-11	ELECT	4.7uF	20%	50V	
C510	1-126-301-11	ELECT	1uF	20%	50V	
C511	1-126-163-11	ELECT	4.7uF	20%	50V	
C513	1-163-124-00	CERAMIC CHIP	200PF	5%	50V	
C521	1-124-589-11	ELECT	47uF	20%	16V	
C522	1-124-589-11	ELECT	47uF	20%	16V	
C523	1-163-104-00	CERAMIC CHIP	30PF	5%	50V	
C524	1-163-104-00	CERAMIC CHIP	30PF	5%	50V	
C525	1-126-176-11	ELECT	220uF	20%	10V	
C526	1-126-157-11	ELECT	10uF	20%	16V	
C527	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C528	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C529	1-124-234-00	ELECT	22uF	20%	16V	
C530	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C531	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C532	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C1201	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C1202	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C1251	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C1252	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C1270	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C1271	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C1272	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C1273	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C1301	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C1302	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C1501	1-164-346-11	CERAMIC CHIP	1uF		16V	

Ref. No.	Part No.	Description	Remark
C1502	1-164-346-11	CERAMIC CHIP 1uF	16V
		< CONNECTOR >	
* CN501	1-568-318-11	PLUG, CONNECTOR 6P	
* CN504	1-568-320-11	PLUG, CONNECTOR 8P	
CNJ102	1-568-319-11	SOCKET, CONNECTOR 8P	
CNP101	1-566-144-11	CONNECTOR, BOARD TO BOARD 16P	
CNP103	1-573-146-11	PLUG, CONNECTOR 8P	
* CNP104	1-564-509-11	PLUG, CONNECTOR 6P	
* CNP105	1-564-521-11	PLUG, CONNECTOR 6P	
* CNP502	1-568-320-11	PLUG, CONNECTOR 8P	
CNP503	1-561-115-00	SOCKET, CONNECTOR 6P	
		< DIODE >	
D100	8-719-800-76	DIODE 1SS226	
D101	8-719-800-76	DIODE 1SS226	
D103	8-719-800-76	DIODE 1SS226	
D106	8-719-002-81	DIODE 1T363	
D107	8-719-002-81	DIODE 1T363	
D108	8-719-002-81	DIODE 1T363	
D109	8-719-002-81	DIODE 1T363	
D110	8-719-990-39	DIODE DCB010	
D111	8-719-990-39	DIODE DCB010	
D112	8-719-990-39	DIODE DCB010	
D113	8-719-990-39	DIODE DCB010	
D331	8-719-990-39	DIODE DCB010	
D333	8-719-210-39	DIODE EC10QS-04	
D334	8-719-021-49	DIODE UZM6.2X	
D501	8-719-422-46	DIODE MA8056	
D502	8-719-990-39	DIODE DCB010	
D503	8-719-990-39	DIODE DCB010	
D504	8-719-301-39	LED SEL2210S (PHONO)	
D505	8-719-301-39	LED SEL2210S (CD)	
D506	8-719-301-39	LED SEL2210S (TAPE)	
D507	8-719-301-39	LED SEL2210S (VIDEO2)	
D508	8-719-301-39	LED SEL2210S (VIDEO1)	
D509	8-719-301-39	LED SEL2210S (WAKE UP VOL SET)	
D510	8-719-301-39	LED SEL2210S (ON/STANDBY)	
D511	8-719-301-39	LED SEL2210S (TUNER)	
D512	8-719-301-39	LED SEL2210S (DAT)	
D514	8-719-301-44	LED SEL2410E-D (VIDEO2)	
D515	8-719-301-44	LED SEL2410E-D (VIDEO1)	
D521	8-719-422-46	DIODE MA8056	
D522	8-719-422-46	DIODE MA8056	
D523	8-719-990-39	DIODE DCB010	
D1201	8-719-800-76	DIODE 1SS226	
D1251	8-719-800-76	DIODE 1SS226	
D1270	8-719-990-39	DIODE DCB010	
D1501	8-719-990-39	DIODE DCB010	
D1502	8-719-990-39	DIODE DCB010	
D1503	8-719-990-39	DIODE DCB010	
		< TRANSISTOR >	
FET1201	8-729-232-69	TRANSISTOR 2SK208GR3	
FET1251	8-729-232-69	TRANSISTOR 2SK208GR3	
		< FLUORESCENT INDICATOR >	
FL501	1-519-654-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC101	8-759-635-26	IC M5283P	
IC102	8-759-045-15	IC CS5339-KS	
IC103	8-759-805-14	IC LC7822	
IC104	8-759-805-14	IC LC7822	
IC106	8-759-511-68	IC CXD8245M	
IC108	8-752-339-86	IC CXD2557M	
IC109	8-759-059-84	IC M37450M8-514FP	
IC110	8-759-973-04	IC MSM41464-10RS	
IC111	8-752-341-99	IC CXD2701Q	
IC112	8-752-332-80	IC CXD1160AQ	
IC113	8-759-636-55	IC M5218AFP	
IC114	8-759-636-55	IC M5218AFP	
IC115	8-759-636-55	IC M5218AFP	
IC116	8-759-636-55	IC M5218AFP	
IC118	8-759-636-55	IC M5218AFP	
IC119	8-759-636-55	IC M5218AFP	
IC121	8-759-908-17	IC TL082CPS	
IC122	8-759-982-44	IC RC79L05A	
IC123	8-759-054-64	IC CXD2905AQ	
IC124	8-759-517-14	IC MB625473PF-G	
IC125	8-759-982-21	IC RC78L05A	
IC331	8-752-349-01	IC CXD2561AM	
IC332	8-752-342-65	IC CXD2560M	
IC333	8-759-234-20	IC TC7S08F	
IC501	8-759-512-46	IC MSC7162	
IC502	8-759-512-45	IC SN755731	
IC503	8-759-512-45	IC SN755731	
IC504	8-759-512-46	IC MSC7162	
IC505	8-759-512-47	IC SN755721	
IC506	8-759-059-82	IC TMP90CM40F-2611	
IC507	8-759-605-16	IC M51953BL	
IC508	8-759-059-83	IC MC68HC11L6SC400618FU	
IC509	8-759-512-48	IC XR-1092	
		< JUMPER RESISTOR >	
JW103	1-216-095-00	METAL CHIP 0 5%	1/10W

DSP PANEL

Ref. No.	Part No.	Description	Remark
		< COIL >	
L100	1-410-397-21	FERRITE BEAD INDUCTOR	
L102	1-406-416-11	COIL (OSC)	
L260	1-412-390-21	INDUCTOR CHIP 0uH	
L262	1-412-390-21	INDUCTOR CHIP 0uH	
L333	1-412-390-21	INDUCTOR CHIP 0uH	
L399	1-410-369-11	INDUCTOR CHIP 1uH	
		< TRANSISTOR >	
Q100	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q101	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q102	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q103	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q104	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q105	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q106	8-729-805-65	TRANSISTOR 2SA1344	
Q107	8-729-805-65	TRANSISTOR 2SA1344	
Q108	8-729-805-65	TRANSISTOR 2SA1344	
Q109	8-729-602-21	TRANSISTOR 2SC4154	
Q110	8-729-805-65	TRANSISTOR 2SA1344	
Q111	8-729-805-65	TRANSISTOR 2SA1344	
Q112	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q113	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q114	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q115	8-729-805-41	TRANSISTOR 2SC3398	
Q116	8-729-602-21	TRANSISTOR 2SC4154	
Q117	8-729-602-21	TRANSISTOR 2SC4154	
Q118	8-729-805-41	TRANSISTOR 2SC3398	
Q123	8-729-805-65	TRANSISTOR 2SA1344	
Q124	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q125	8-729-602-36	TRANSISTOR 2SA1602	
Q126	8-729-805-65	TRANSISTOR 2SA1344	
Q127	8-729-805-41	TRANSISTOR 2SC3398	
Q128	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q129	8-729-107-46	TRANSISTOR 2SC3624A-L15	
Q130	8-729-805-65	TRANSISTOR 2SA1344	
Q132	8-729-805-65	TRANSISTOR 2SA1344	
Q331	8-729-805-41	TRANSISTOR 2SC3398	
Q332	8-729-805-65	TRANSISTOR 2SA1344	
Q333	8-729-205-97	TRANSISTOR 2SC3668-Y	
Q501	8-729-602-36	TRANSISTOR 2SA1602	
Q502	8-729-602-21	TRANSISTOR 2SC4154	
Q503	8-729-805-65	TRANSISTOR 2SA1344	
Q504	8-729-805-65	TRANSISTOR 2SA1344	
Q505	8-729-602-36	TRANSISTOR 2SA1602	
Q506	8-729-805-41	TRANSISTOR 2SC3398	
Q507	8-729-602-21	TRANSISTOR 2SC4154	
Q508	8-729-602-21	TRANSISTOR 2SC4154	
Q509	8-729-602-21	TRANSISTOR 2SC4154	
Q510	8-729-602-21	TRANSISTOR 2SC4154	
Q511	8-729-602-21	TRANSISTOR 2SC4154	
Q512	8-729-602-21	TRANSISTOR 2SC4154	
Q513	8-729-602-21	TRANSISTOR 2SC4154	
Q514	8-729-602-21	TRANSISTOR 2SC4154	
Q515	8-729-602-21	TRANSISTOR 2SC4154	
Q516	8-729-602-21	TRANSISTOR 2SC4154	
Q517	8-729-602-21	TRANSISTOR 2SC4154	
Q1201	8-729-602-21	TRANSISTOR 2SC4154	
Q1251	8-729-602-21	TRANSISTOR 2SC4154	
Q1501	8-729-805-65	TRANSISTOR 2SA1344	
		< RESISTOR >	
R101	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R103	1-216-025-00	METAL CHIP 100 5% 1/10W	
R104	1-216-025-00	METAL CHIP 100 5% 1/10W	
R105	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R108	1-216-025-00	METAL CHIP 100 5% 1/10W	
R109	1-216-025-00	METAL CHIP 100 5% 1/10W	
R110	1-216-041-00	METAL CHIP 470 5% 1/10W	
R111	1-216-041-00	METAL CHIP 470 5% 1/10W	
R112	1-216-041-00	METAL CHIP 470 5% 1/10W	
R113	1-216-041-00	METAL CHIP 470 5% 1/10W	
R115	1-216-041-00	METAL CHIP 470 5% 1/10W	
R116	1-216-041-00	METAL CHIP 470 5% 1/10W	
R117	1-216-041-00	METAL CHIP 470 5% 1/10W	
R118	1-216-041-00	METAL CHIP 470 5% 1/10W	
R126	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R128	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R129	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R130	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R131	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R132	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R133	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R134	1-216-043-00	METAL CHIP 560 5% 1/10W	
R135	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R136	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R137	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R138	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R139	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R140	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R141	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R142	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R143	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R146	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R147	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R148	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R150	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R151	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R152	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R153	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R154	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R155	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R157	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R158	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R159	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R163	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R164	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R165	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R166	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R167	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R168	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R172	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R173	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R174	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R175	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R176	1-216-041-00	METAL CHIP	470	5%	1/10W	
R177	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R178	1-216-025-00	METAL CHIP	100	5%	1/10W	
R179	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R182	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R183	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R184	1-216-047-00	METAL CHIP	820	5%	1/10W	
R185	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R186	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R187	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R188	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R189	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R190	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R192	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R193	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R194	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R197	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R198	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R199	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R200	1-216-047-00	METAL CHIP	820	5%	1/10W	
R201	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R202	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R203	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R204	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R205	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R206	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R208	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R209	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R210	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R213	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R214	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R215	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R226	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R227	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R228	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R229	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R230	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R231	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R232	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R233	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R234	1-216-043-00	METAL CHIP	560	5%	1/10W	
R235	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R236	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R237	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R238	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R239	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R240	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R241	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R242	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R243	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R250	1-216-037-00	METAL CHIP	330	5%	1/10W	
R251	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R252	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R253	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R255	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R256	1-216-025-00	METAL CHIP	100	5%	1/10W	
R257	1-216-025-00	METAL CHIP	100	5%	1/10W	
R258	1-216-041-00	METAL CHIP	470	5%	1/10W	
R259	1-216-041-00	METAL CHIP	470	5%	1/10W	
R261	1-216-017-00	METAL CHIP	47	5%	1/10W	
R264	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R265	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R266	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R267	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R268	1-216-025-00	METAL CHIP	100	5%	1/10W	
R269	1-216-025-00	METAL CHIP	100	5%	1/10W	
R270	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R272	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R274	1-216-041-00	METAL CHIP	470	5%	1/10W	
R275	1-216-025-00	METAL CHIP	100	5%	1/10W	
R276	1-216-025-00	METAL CHIP	100	5%	1/10W	
R277	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R280	1-216-025-00	METAL CHIP	100	5%	1/10W	
R281	1-216-025-00	METAL CHIP	100	5%	1/10W	

DSP PANEL

Ref. No.	Part No.	Description	Remark
R282	1-216-025-00	METAL CHIP 100 5% 1/10W	
R283	1-216-025-00	METAL CHIP 100 5% 1/10W	
R284	1-216-033-00	METAL CHIP 220 5% 1/10W	
R285	1-216-025-00	METAL CHIP 100 5% 1/10W	
R286	1-216-001-00	METAL CHIP 10 5% 1/10W	
R287	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R288	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R289	1-216-033-00	METAL CHIP 220 5% 1/10W	
R290	1-216-033-00	METAL CHIP 220 5% 1/10W	
R291	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R293	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R294	1-216-025-00	METAL CHIP 100 5% 1/10W	
R295	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R296	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R297	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R298	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R301	1-216-025-00	METAL CHIP 100 5% 1/10W	
R301	1-216-033-00	METAL CHIP 220 5% 1/10W	
R302	1-216-025-00	METAL CHIP 100 5% 1/10W	
R306	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R307	1-216-017-00	METAL CHIP 47 5% 1/10W	
R308	1-216-041-00	METAL CHIP 470 5% 1/10W	
R309	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R310	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R311	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R312	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R313	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R314	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R317	1-216-025-00	METAL CHIP 100 5% 1/10W	
R318	1-216-295-00	METAL CHIP 0 5% 1/10W	
R319	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R321	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R330	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R331	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R332	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R333	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R334	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R335	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R336	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R337	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R338	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R339	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R340	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R341	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R342	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R343	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R344	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R345	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R346	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R347	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R348	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R349	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R350	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R352	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R353	1-216-088-00	METAL CHIP 43K 5% 1/10W	
R354	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R355	1-216-033-00	METAL CHIP 220 5% 1/10W	
R358	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R359	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R360	1-216-001-00	METAL CHIP 10 5% 1/10W	
R364	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R501	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R502	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R503	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R504	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R505	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R506	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R507	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R508	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R511	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R514	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R516	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R518	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R520	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R522	1-216-025-00	METAL CHIP 100 5% 1/10W	
R523	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R524	1-216-025-00	METAL CHIP 100 5% 1/10W	
R525	1-216-025-00	METAL CHIP 100 5% 1/10W	
R526	1-216-025-00	METAL CHIP 100 5% 1/10W	
R527	1-216-025-00	METAL CHIP 100 5% 1/10W	
R528	1-216-025-00	METAL CHIP 100 5% 1/10W	
R529	1-216-025-00	METAL CHIP 100 5% 1/10W	
R530	1-216-025-00	METAL CHIP 100 5% 1/10W	
R531	1-216-025-00	METAL CHIP 100 5% 1/10W	
R532	1-216-025-00	METAL CHIP 100 5% 1/10W	
R534	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R535	1-216-025-00	METAL CHIP 100 5% 1/10W	
R536	1-216-025-00	METAL CHIP 100 5% 1/10W	
R537	1-216-025-00	METAL CHIP 100 5% 1/10W	
R538	1-216-025-00	METAL CHIP 100 5% 1/10W	
R539	1-216-025-00	METAL CHIP 100 5% 1/10W	
R540	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R541	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R542	1-216-025-00	METAL CHIP 100 5% 1/10W	
R543	1-216-025-00	METAL CHIP 100 5% 1/10W	
R544	1-216-027-00	METAL CHIP 120 5% 1/10W	
R545	1-216-027-00	METAL CHIP 120 5% 1/10W	
R546	1-216-027-00	METAL CHIP 120 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R547	1-216-027-00	METAL CHIP	120	5%	1/10W	
R548	1-216-029-00	METAL CHIP	150	5%	1/10W	
R549	1-216-029-00	METAL CHIP	150	5%	1/10W	
R550	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R551	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R552	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R553	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R554	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R555	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R556	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R557	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R558	1-216-025-00	METAL CHIP	100	5%	1/10W	
R560	1-216-027-00	METAL CHIP	120	5%	1/10W	
R561	1-216-027-00	METAL CHIP	120	5%	1/10W	
R562	1-216-021-00	METAL CHIP	68	5%	1/10W	
R563	1-216-021-00	METAL CHIP	68	5%	1/10W	
R564	1-216-021-00	METAL CHIP	68	5%	1/10W	
R565	1-216-027-00	METAL CHIP	120	5%	1/10W	
R566	1-216-027-00	METAL CHIP	120	5%	1/10W	
R567	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R568	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R569	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R570	1-216-025-00	METAL CHIP	100	5%	1/10W	
R572	1-216-025-00	METAL CHIP	100	5%	1/10W	
R573	1-216-025-00	METAL CHIP	100	5%	1/10W	
R574	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R575	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R577	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R578	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R579	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R580	1-216-025-00	METAL CHIP	100	5%	1/10W	
R581	1-216-025-00	METAL CHIP	100	5%	1/10W	
R582	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R584	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R585	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R586	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R587	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R588	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R589	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R590	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R591	1-216-019-00	METAL CHIP	56	5%	1/10W	
R592	1-216-019-00	METAL CHIP	56	5%	1/10W	
R593	1-216-019-00	METAL CHIP	56	5%	1/10W	
R594	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R621	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R622	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R623	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R1201	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R1203	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R1204	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R1205	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R1206	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R1207	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1208	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R1209	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R1210	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R1211	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1212	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R1213	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R1214	1-216-045-00	METAL CHIP	680	5%	1/10W	
R1251	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R1253	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R1254	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R1255	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R1256	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R1257	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1258	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R1259	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R1260	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R1261	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1262	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R1263	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R1264	1-216-045-00	METAL CHIP	680	5%	1/10W	
R1270	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1301	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1302	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1303	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R1501	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R1502	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R3556	1-216-033-00	METAL CHIP	220	5%	1/10W	
		< SWITCH >				
S501	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)				
S502	1-554-303-21	SWITCH, TACTILE (DISPLAY)				
S503	1-554-303-21	SWITCH, TACTILE (DSP)				
S504	1-554-303-21	SWITCH, TACTILE (WAKE UP VOL SET)				
S505	1-554-303-21	SWITCH, TACTILE (BALANCE)				
S506	1-554-303-21	SWITCH, TACTILE (PRESET)				
S507	1-554-303-21	SWITCH, TACTILE (PARAMETRIC EQUALIZER)				
S508	1-554-303-21	SWITCH, TACTILE (DYNAMIC SOUND)				
S509	1-554-303-21	SWITCH, TACTILE (PRESENCE SURROUND)				
S510	1-554-303-21	SWITCH, TACTILE (ON/OFF)				
S511	1-554-303-21	SWITCH, TACTILE (AI BC)				
S512	1-554-303-21	SWITCH, TACTILE (MEMORY)				
S513	1-554-303-21	SWITCH, TACTILE (CURSOR CONTROL ◀)				
S514	1-554-303-21	SWITCH, TACTILE (CURSOR CONTROL ▲)				
S515	1-554-303-21	SWITCH, TACTILE (CURSOR CONTROL ▼)				

DSP **PANEL** **ELECT CAPACITOR** **FLD** **POWER AMPLIFIER**

SPEAKER **TRANSFORMER (A)** **TRANSFORMER (B)** **VOL**

Ref. No.	Part No.	Description	Remark
S516	1-554-303-21	SWITCH, TACTILE (CURSOR CONTROL ▶)	
S517	1-554-303-21	SWITCH, TACTILE (VIDEO FUNCTION)	
S518	1-554-303-21	SWITCH, TACTILE (AUDIO FUNCTION)	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X100	1-578-667-11	VIBRATOR, CRYSTAL (49.152MHz)	
X101	1-577-253-11	VIBRATOR, CERAMIC (16.93MHz)	
X102	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	
X501	1-579-351-11	VIBRATOR, CERAMIC (15MHz)	
X502	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	

****

Ref. No.	Part No.	Description	Remark
*	1-644-841-11	ELECT CAPACITOR BOARD	
		********************	
*	A-4356-256-A	FLD BOARD, COMPLETE	
		*******************	
*	A-4356-052-A	POWER AMPLIFIER BOARD, COMPLETE	
		******************************	
*	1-644-586-11	SPEAKER BOARD	
		*************	
*	1-644-839-11	TRANSFORMER (A) BOARD	
		********************	
*	1-644-840-11	TRANSFORMER (B) BOARD	
		********************	
*	1-644-837-11	VOL BOARD	
		*********	

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C601	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C602	1-126-933-11	ELECT	100uF	20%	16V	
C603	1-124-915-11	ELECT	10uF	20%	63V	
C604	1-124-915-11	ELECT	10uF	20%	63V	
C702	1-126-176-11	ELECT	220uF	20%	10V	
C704	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C706	1-124-927-11	ELECT	4.7uF	20%	100V	
C707	1-126-101-11	ELECT	100uF	20%	16V	
C708	1-124-907-11	ELECT	10uF	20%	50V	
C709	1-164-159-11	CERAMIC	0.1uF		50V	
C710	1-124-910-11	ELECT	47uF	20%	50V	
C711	1-164-159-11	CERAMIC	0.1uF		50V	
C712	1-164-159-11	CERAMIC	0.1uF		50V	
C801	1-124-907-11	ELECT	10uF	20%	50V	
C802	1-162-290-31	CERAMIC	470PF	10%	50V	
C803	1-124-122-11	ELECT	100uF	20%	50V	
C804	1-162-282-31	CERAMIC	100PF	10%	50V	
C806	1-124-910-11	ELECT	47uF	20%	50V	
C807	1-124-122-11	ELECT	100uF	20%	50V	
C809	1-126-233-11	ELECT	22uF	20%	50V	
C810	1-136-165-00	FILM	0.1uF	5%	50V	
C811	1-136-165-00	FILM	0.1uF	5%	50V	
C813	1-136-165-00	FILM	0.1uF	5%	50V	
C816	1-126-233-11	ELECT	22uF	20%	50V	
C831	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C851	1-124-907-11	ELECT	10uF	20%	50V	
C852	1-162-290-31	CERAMIC	470PF	10%	50V	
C853	1-124-122-11	ELECT	100uF	20%	50V	
C854	1-162-282-31	CERAMIC	100PF	10%	50V	
C856	1-124-910-11	ELECT	47uF	20%	50V	
C860	1-136-165-00	FILM	0.1uF	5%	50V	
C863	1-136-165-00	FILM	0.1uF	5%	50V	
C866	1-126-233-11	ELECT	22uF	20%	50V	
C901	1-126-224-11	ELECT	4700uF	20%	42V	
C902	1-126-224-11	ELECT	4700uF	20%	42V	
C905	1-136-171-00	FILM	0.33uF	5%	50V	
C906	1-136-171-00	FILM	0.33uF	5%	50V	
C923	1-124-911-11	ELECT	220uF	20%	50V	
C924	1-124-911-11	ELECT	220uF	20%	50V	
C925	1-124-122-11	ELECT	100uF	20%	50V	
C926	1-164-159-11	CERAMIC	0.1uF		50V	
C941	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C942	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C943	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C1001	1-123-605-00	ELECT	100uF	20%	100V	
C1002	1-124-667-11	ELECT	10uF	20%	100V	
C1003	1-124-667-11	ELECT	10uF	20%	100V	
C1004	1-124-667-11	ELECT	10uF	20%	100V	
C1005	1-124-667-11	ELECT	10uF	20%	100V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN601	1-560-942-00	PIN, CONNECTOR 6P	
* CN802	1-573-087-11	PIN, CONNECTOR 13P	
CN891	1-563-311-11	CONNECTOR, BOARD TO BOARD 10P	
* CN892	1-564-518-11	PLUG, CONNECTOR 3P	
CNJ603	1-569-656-11	HOUSING, CONNECTOR 8P	
CNJ604	1-573-147-11	HOUSING, CONNECTOR 12P	
CNJ902	1-573-095-11	SOCKET, CONNECTOR 15P	
* CNJ911	1-573-094-11	SOCKET, CONNECTOR 13P	
* CNJ912	1-573-094-11	SOCKET, CONNECTOR 13P	
CNP602	1-568-319-11	SOCKET, CONNECTOR 8P	
CNP605	1-564-507-11	PLUG, CONNECTOR 4P	
* CNP606	1-564-505-11	PLUG, CONNECTOR 2P	
* CNP801	1-564-521-11	PLUG, CONNECTOR 6P	
* CNP903	1-564-321-00	PIN, CONNECTOR 2P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D601	8-719-987-63	DIODE 1N4148M	
D602	8-719-987-63	DIODE 1N4148M	
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-987-63	DIODE 1N4148M	
D706	8-719-987-63	DIODE 1N4148M	

ELECT CAPACITOR **FLD** **POWER AMPLIFIER** **SPEAKER**

TRANSFORMER (A) **TRANSFORMER (B)** **VOL**

Ref. No.	Part No.	Description	Remark
D801	8-719-987-63	DIODE 1N4148M	
D802	8-719-987-63	DIODE 1N4148M	
D851	8-719-987-63	DIODE 1N4148M	
D852	8-719-987-63	DIODE 1N4148M	
D915	8-719-200-82	DIODE 11ES2	
D916	8-719-200-82	DIODE 11ES2	
D917	8-719-934-22	DIODE HZS30-2L	
D918	8-719-014-88	DIODE UZP-6.8BC	
D1001	8-719-200-82	DIODE 11ES2	
D1002	8-719-200-82	DIODE 11ES2	
D1003	8-719-200-82	DIODE 11ES2	
D1004	8-719-200-82	DIODE 11ES2	
D1005	8-719-987-63	DIODE 1N4148M	
D1006	8-719-002-73	DIODE UZL-36M	
D1007	8-719-002-73	DIODE UZL-36M	
D1008	8-719-934-26	DIODE HZS33-2L	
D1009	8-719-934-26	DIODE HZS33-2L	
D1010	8-719-934-22	DIODE HZS30-2L	

< IC >

Ref. No.	Part No.	Description	Remark
IC601	8-759-820-62	IC LB1639	
IC701	8-759-111-68	IC uPC1237HA	
IC702	8-759-987-16	IC LM393P	
IC703	8-759-947-34	IC LM35DZ	
IC801	8-749-900-24	IC STK-4162MK2	

< JACK >

Ref. No.	Part No.	Description	Remark
J891	1-537-276-11	TERMINAL BOARD (SPEAKER)	
J921	1-573-110-11	JACK, PIN 2P (SURROUND SPEAKER)	

< COIL >

Ref. No.	Part No.	Description	Remark
* L801	1-420-872-00	COIL, AIR CORE	
* L851	1-420-872-00	COIL, AIR CORE	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q601	8-729-801-93	TRANSISTOR 2SD1387	
Q602	8-729-900-80	TRANSISTOR DTC114ES	
Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q801	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q851	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q1001	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q1002	8-729-111-29	TRANSISTOR 2SD1616A-K	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
⚠R601	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R602	1-249-422-11	CARBON	2.7K	5%	1/4W	
R603	1-249-422-11	CARBON	2.7K	5%	1/4W	
R604	1-249-425-11	CARBON	4.7K	5%	1/4W	
R605	1-249-425-11	CARBON	4.7K	5%	1/4W	
R606	1-249-416-11	CARBON	820	5%	1/4W	
R607	1-249-425-11	CARBON	4.7K	5%	1/4W	
R701	1-249-433-11	CARBON	22K	5%	1/4W	
R702	1-249-441-11	CARBON	100K	5%	1/4W	
R703	1-249-433-11	CARBON	22K	5%	1/4W	
R704	1-249-433-11	CARBON	22K	5%	1/4W	
R705	1-249-429-11	CARBON	10K	5%	1/4W	
R706	1-249-437-11	CARBON	47K	5%	1/4W	
R707	1-249-429-11	CARBON	10K	5%	1/4W	
R708	1-249-424-11	CARBON	3.9K	5%	1/4W	
R709	1-249-427-11	CARBON	6.8K	5%	1/4W	
R710	1-249-429-11	CARBON	10K	5%	1/4W	
R711	1-249-417-11	CARBON	1K	5%	1/4W	
R712	1-249-441-11	CARBON	100K	5%	1/4W	
R713	1-247-876-11	CARBON	75K	5%	1/4W	
R714	1-249-417-11	CARBON	1K	5%	1/4W	
R715	1-249-438-11	CARBON	56K	5%	1/4W	
R801	1-249-417-11	CARBON	1K	5%	1/4W	
R802	1-249-437-11	CARBON	47K	5%	1/4W	
R803	1-249-414-11	CARBON	560	5%	1/4W	
R804	1-249-438-11	CARBON	56K	5%	1/4W	
R805	1-247-756-11	CARBON	2.2K	5%	1/2W	
R806	1-247-756-11	CARBON	2.2K	5%	1/2W	
⚠R807	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R808	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R809	1-217-151-00	RES, METAL PLATE	0.22		2W	
R810	1-247-752-11	CARBON	1K	5%	1/2W	
R811	1-247-752-11	CARBON	1K	5%	1/2W	
⚠R812	1-212-958-00	FUSIBLE	10	5%	1/2W	F
R813	1-249-417-11	CARBON	1K	5%	1/4W	
R814	1-249-431-11	CARBON	15K	5%	1/4W	
R815	1-249-441-11	CARBON	100K	5%	1/4W	
R816	1-249-438-11	CARBON	56K	5%	1/4W	
R817	1-249-429-11	CARBON	10K	5%	1/4W	
R851	1-249-417-11	CARBON	1K	5%	1/4W	
R852	1-249-437-11	CARBON	47K	5%	1/4W	
R853	1-249-414-11	CARBON	560	5%	1/4W	
R854	1-249-438-11	CARBON	56K	5%	1/4W	
R855	1-247-756-11	CARBON	2.2K	5%	1/2W	
R856	1-247-756-11	CARBON	2.2K	5%	1/2W	
⚠R859	1-217-151-00	RES, METAL PLATE	0.22		2W	
⚠R862	1-212-958-00	FUSIBLE	10	5%	1/2W	F
R863	1-249-417-11	CARBON	1K	5%	1/4W	
R864	1-249-431-11	CARBON	15K	5%	1/4W	
R865	1-249-441-11	CARBON	100K	5%	1/4W	
R866	1-249-437-11	CARBON	47K	5%	1/4W	
R867	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R876	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R917	1-247-713-11	CARBON	1K	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

ELECT CAPACITOR FLD POWER AMPLIFIER SPEAKER TRANSFORMER (A) TRANSFORMER (B) VOL JACK POWER

Ref. No.	Part No.	Description				Remark
R918	1-249-441-11	CARBON	100K	5%	1/4W	
⚠R1001	1-212-966-00	FUSIBLE	22	5%	1/2W	F
R1002	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1003	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1004	1-247-903-00	CARBON	1M	5%	1/4W	
R1005	1-247-902-11	CARBON	910K	5%	1/4W	
R1006	1-249-433-11	CARBON	22K	5%	1/4W	
⚠R1901	1-219-134-11	FUSIBLE	0.1	5%	1/4W	F
⚠R1902	1-219-134-11	FUSIBLE	0.1	5%	1/4W	F
⚠R1905	9-910-999-33	FUSIBLE	0.22	5%	1/4W	F
⚠R1906	9-910-999-33	FUSIBLE	0.22	5%	1/4W	F

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV601	1-241-803-11	RES, VAR, CARBON(WITH MOTOR) 10K (VOLUME)

< RELAY >

Ref. No.	Part No.	Description
RY1001	1-515-886-11	RELAY

****

* 1-642-413-11 JACK BOARD

****

* A-4356-274-A POWER BOARD, COMPLETE

****

Ref. No.	Part No.	Description
*	1-533-213-31	HOLDER, FUSE
*	3-309-144-21	HEAT SINK
	7-682-547-04	SCREW +BVTT 3X6 (S)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C1	1-124-915-11	ELECT	10uF	20%	63V
C2	1-162-306-11	CERAMIC	0.01uF	20%	16V
C3	1-162-306-11	CERAMIC	0.01uF	20%	16V
C5	1-136-153-00	FILM	0.01uF	5%	50V
C7	1-162-306-11	CERAMIC	0.01uF	20%	16V
C8	1-162-294-31	CERAMIC	0.001uF	10%	50V
C651	1-162-282-31	CERAMIC	100PF	10%	50V
C652	1-162-215-31	CERAMIC	47PF	5%	50V
C653	1-161-379-00	CERAMIC	0.01uF	20%	25V
C654	1-162-294-31	CERAMIC	0.001uF	10%	50V
C655	1-124-282-00	ELECT	22uF	20%	25V
C656	1-124-119-00	ELECT	330uF	20%	16V
C661	1-162-282-31	CERAMIC	100PF	10%	50V
C662	1-162-215-31	CERAMIC	47PF	5%	50V
C663	1-161-379-00	CERAMIC	0.01uF	20%	25V
C664	1-162-294-31	CERAMIC	0.001uF	10%	50V
C666	1-124-119-00	ELECT	330uF	20%	16V
C903	1-126-943-11	ELECT	2200uF	20%	25V
C904	1-126-943-11	ELECT	2200uF	20%	25V
C907	1-136-165-00	FILM	0.1uF	5%	50V
C908	1-136-165-00	FILM	0.1uF	5%	50V
C909	1-124-477-11	ELECT	47uF	20%	25V
C910	1-124-477-11	ELECT	47uF	20%	25V
C911	1-124-915-11	ELECT	10uF	20%	63V
C912	1-124-915-11	ELECT	10uF	20%	63V
C913	1-124-915-11	ELECT	10uF	20%	63V
C914	1-126-937-11	ELECT	4700uF	20%	16V
C915	1-124-915-11	ELECT	10uF	20%	63V
C916	1-124-915-11	ELECT	10uF	20%	63V
C917	1-126-947-11	ELECT	47uF	20%	35V
C918	1-124-915-11	ELECT	10uF	20%	63V
C1101	1-126-948-11	ELECT	100uF	20%	35V
C1102	1-124-915-11	ELECT	10uF	20%	63V
C1103	1-161-379-00	CERAMIC	0.01uF	20%	25V
C2000	1-101-006-00	CERAMIC	0.047uF		50V

< CONNECTOR >

Ref. No.	Part No.	Description
* CN902	1-564-506-11	PLUG, CONNECTOR 3P
* CN904	1-564-506-11	PLUG, CONNECTOR 3P
* CNJ1	1-580-739-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL 1)
* CNJ2	1-580-740-11	SOCKET, CONNECTOR 17P (SYSTEM CONTROL 2)
* CNJ3	1-563-534-11	CONNECTOR, BOARD TO BOARD 16P
* CNP7	1-564-499-11	PIN, CONNECTOR 6P
* CNP8	1-564-498-11	PIN, CONNECTOR 5P
* CNP903	1-564-321-00	PIN, CONNECTOR 2P
* CNP905	1-573-087-11	PIN, CONNECTOR 13P
CNP906	1-573-109-11	PIN, CONNECTOR 15P
* CNP907	1-506-981-11	PIN, CONNECTOR 10P
CNP908	1-568-317-11	SOCKET, CONNECTOR 6P
* CNP909	1-573-148-11	PLUG, CONNECTOR 12P
* CNP910	1-564-338-00	PIN, CONNECTOR 4P
* CNP911	1-564-505-11	PLUG, CONNECTOR 2P

< DIODE >

Ref. No.	Part No.	Description	
D891	8-719-987-63	DIODE	1N4148M
D892	8-719-987-63	DIODE	1N4148M
D901	8-719-510-68	DIODE	D5SBA20F01
D902	8-719-987-63	DIODE	1N4148M
D903	8-719-987-63	DIODE	1N4148M
D904	8-719-200-82	DIODE	11ES2
D905	8-719-200-82	DIODE	11ES2
D906	8-719-200-82	DIODE	11ES2
D907	8-719-200-82	DIODE	11ES2
D908	8-719-200-82	DIODE	11ES2
D909	8-719-200-82	DIODE	11ES2
D910	8-719-987-63	DIODE	1N4148M
D911	8-719-933-36	DIODE	HZS6B1L
D919	8-719-987-63	DIODE	1N4148M
D920	8-719-987-63	DIODE	1N4148M

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

JACK **POWER**

Ref. No.	Part No.	Description	Remark
D1101	8-719-200-82	DIODE 11ES2	
D1102	8-719-200-82	DIODE 11ES2	

< IC >

Ref. No.	Part No.	Description	Remark
IC1	8-749-921-11	IC GP1F32R (DIGITAL OPTICAL CD IN)	
IC2	8-749-921-11	IC GP1F32R (DIGITAL OPTICAL DAT IN)	
IC3	8-749-921-12	IC GP1F32T (DIGITAL OPTICAL DAT OUT)	
IC651	8-759-634-50	IC M5218AL	
IC901	8-759-602-66	IC M5230L-A	

< JACK >

Ref. No.	Part No.	Description	Remark
J2	1-569-662-11	JACK, PIN 1P (SUPER WOOFER)	
J651	1-562-837-21	JACK (HEADPHONES)	
⚠J901	1-526-931-11	INLET, AC (~ AC IN)	

< COIL >

Ref. No.	Part No.	Description	Remark
L1	1-410-397-21	FERRITE BEAD INDUCTOR	

< LINE FILTER >

Ref. No.	Part No.	Description	Remark
⚠L901	1-424-485-11	FILTER, LINE	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q651	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q652	8-729-900-61	TRANSISTOR DTA114ES	
Q661	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q901	8-729-209-15	TRANSISTOR 2SD2012	
Q902	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q903	8-729-900-80	TRANSISTOR DTC114ES	
Q905	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q906	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q908	8-729-801-84	TRANSISTOR 2SB1013-4	
Q909	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q910	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q911	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q1101	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q1601	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q1602	8-729-141-30	TRANSISTOR 2SC3623A-LK	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
⚠R2	9-910-999-33	FUSIBLE 0.22 5% 1/4W	F
⚠R3	9-910-999-33	FUSIBLE 0.22 5% 1/4W	F
R5	1-249-409-11	CARBON 220 5% 1/4W	
R651	1-249-433-11	CARBON 22K 5% 1/4W	
R652	1-247-887-00	CARBON 220K 5% 1/4W	
R653	1-249-405-11	CARBON 100 5% 1/4W	
R654	1-249-423-11	CARBON 3.3K 5% 1/4W	
R655	1-249-417-11	CARBON 1K 5% 1/4W	
R656	1-249-405-11	CARBON 100 5% 1/4W	
R657	1-249-441-11	CARBON 100K 5% 1/4W	
R658	1-249-429-11	CARBON 10K 5% 1/4W	
R661	1-249-433-11	CARBON 22K 5% 1/4W	
R662	1-247-887-00	CARBON 220K 5% 1/4W	
R663	1-249-405-11	CARBON 100 5% 1/4W	
R666	1-249-405-11	CARBON 100 5% 1/4W	
R668	1-249-429-11	CARBON 10K 5% 1/4W	
R902	1-247-903-00	CARBON 1M 5% 1/4W	
R905	1-249-413-11	CARBON 470 5% 1/4W	
R906	1-249-434-11	CARBON 27K 5% 1/4W	
R907	1-249-425-11	CARBON 4.7K 5% 1/4W	
R908	1-249-431-11	CARBON 15K 5% 1/4W	
R909	1-249-431-11	CARBON 15K 5% 1/4W	
R910	1-249-419-11	CARBON 1.5K 5% 1/4W	
R911	1-249-429-11	CARBON 10K 5% 1/4W	
R912	1-249-429-11	CARBON 10K 5% 1/4W	
R913	1-249-429-11	CARBON 10K 5% 1/4W	
R914	1-249-429-11	CARBON 10K 5% 1/4W	
R919	1-249-429-11	CARBON 10K 5% 1/4W	
R920	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R921	1-215-865-11	METAL OXIDE 220 5% 1W	F
R922	1-249-429-11	CARBON 10K 5% 1/4W	
R923	1-249-425-11	CARBON 4.7K 5% 1/4W	
R924	1-249-429-11	CARBON 10K 5% 1/4W	
R925	1-249-429-11	CARBON 10K 5% 1/4W	
R926	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R928	1-216-425-11	METAL OXIDE 56 5% 1W	F
R930	1-249-417-11	CARBON 1K 5% 1/4W	
R930	1-249-423-11	CARBON 3.3K 5% 1/4W	
R931	1-249-441-11	CARBON 100K 5% 1/4W	
R932	1-249-429-11	CARBON 10K 5% 1/4W	
R1101	1-249-429-11	CARBON 10K 5% 1/4W	

< RELAY >

Ref. No.	Part No.	Description	Remark
RY801	1-515-790-11	RELAY	
RY802	1-515-790-11	RELAY	
RY901	1-515-626-11	RELAY	
RY902	1-515-626-11	RELAY	

****

MISCELLANEOUS
****

Ref. No.	Part No.	Description	Remark
⚠F901	1-532-286-00	FUSE, TIME-LAG (T2.5A)	
IC902	8-759-231-53	IC TA7805S	
M801	1-541-860-11	MOTOR, DC FAN	
⚠PT901	1-450-977-11	TRANSFORMER, POWER (AEP)	
⚠PT901	1-450-978-11	TRANSFORMER, POWER (UK)	
Q904	8-729-209-15	TRANSISTOR 2SD2012	

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

****

HARDWARE LIST

****

Ref. No.	Part No.	Description	Remark
#1	7-685-203-14	SCREW +KTP 2X5 TYPE2 NON-SLIT	
#2	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#3	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#4	7-685-132-19	SCREW +PTPWH 2.6X5 (TYPE2)	
#5	7-682-547-04	SCREW +BVTT 3X6 (S)	
#6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#7	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
#8	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S	
#9	7-682-547-09	SCREW +BVTT 3X6 (S)	
#10	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	

English
92H0459-1
Printed in Japan
© 1992. 8

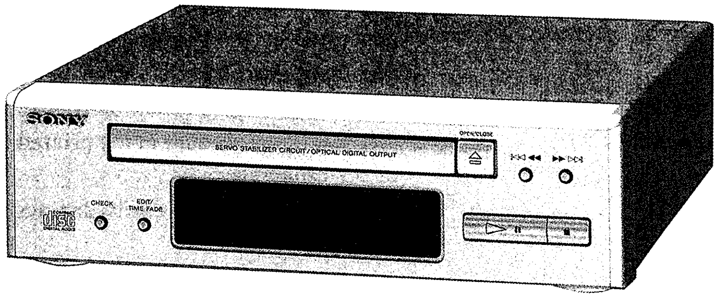
Sony Corporation
Audio Group

Published by Customer Relations and Service Group

CDP-H7700D

SERVICE MANUAL

E Model
Tourist Model



This set is the CD player section
in FH-E959.

Model Name Using Similar Mechanism	CDP-H3700
CD Mechanism Type	CDM13BA-5BD3
Optical Pick-Up Block Type	BU-5BD3

SPECIFICATIONS

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

使用時は添付資料も参照のこと
Refer to the additional documents.

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL
1-1. Parts Identification 3

2. TEST MODES
2-1. Test Mode of Display Microcomputer (IC401) 4
2-2. Test Mode of CD System Controller (IC202) 4

3. ELECTRICAL BLOCK CHECKING 5

4. DIAGRAMS
4-1. Pin Description 7
4-2. Block Diagram 9
4-3. Printed Wiring Boards 12
4-4. Schematic Diagram 15
4-5. Semiconductor Lead Layouts 22

5. EXPLODED VIEWS
5-1. Chassis 23
5-2. CD Block (CDM13BA-5BD3) 24
5-3. Optical Pick-Up Block (BU-5BD3) 25

6. ELECTRICAL PARTS LIST 26

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

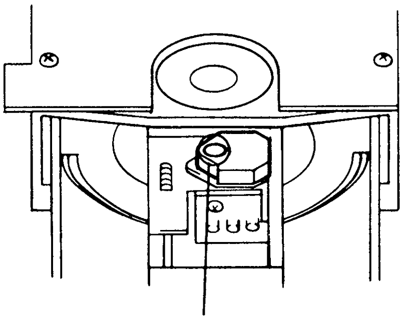
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential diference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.

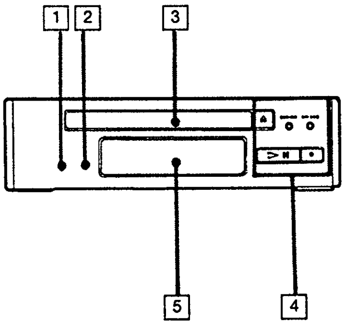


- Confirm that laser beam is spread.
- Up and down motion of the objective lens. (3 times)

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. PARTS IDENTIFICATION



1 CHECK button ㊻
2 EDIT/TIME FADE button (106) (118)
3 Disc tray
4 CD operation buttons
  ≜ : OPEN/CLOSE
  ▷II : Play/pause
  I◁◁ ◀◀ ▶▶ ▷▷I : Manual search (when kept depressed) /Automatic Music Sensor (when pressed)
5 Display window

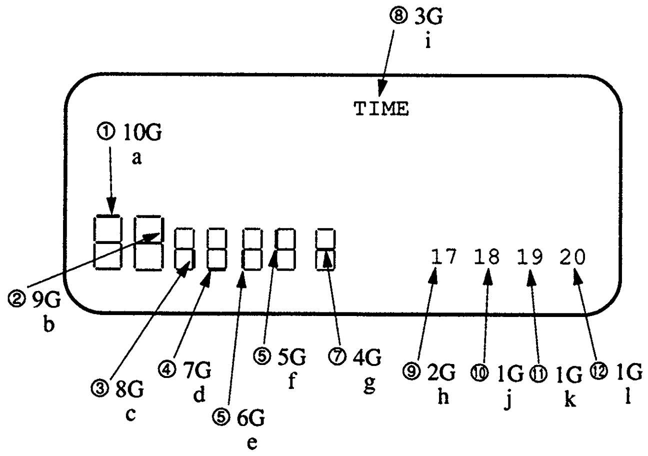
SECTION 2
TEST MODES

2-1. Test Mode of Display Microcomputer (IC401)

Connect Pin ㉝ of IC401 to ground and turn ON the POWER switch, thus you can test the following 3 tests.

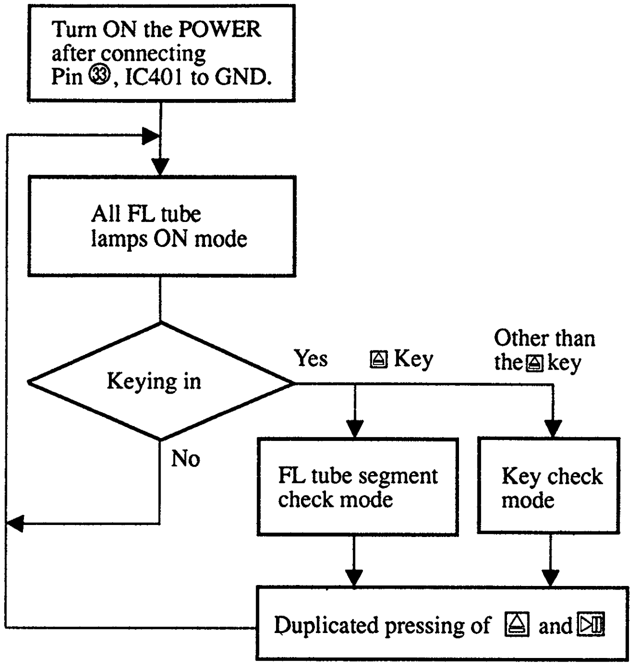
(1) All FL tube ON
This mode is actuated immediately after turning ON the POWER switch.

(2) FL tube segment check
This mode is actuated by pressing the ⏏ key in the state of (1). Every time the ⏏ key is pressed, the segments are indicated sequentially from the segment a. When the last l segment is displayed, keying in is no longer accepted while continuing the lighting-up state of the last segment. Conditions are normal provided all lamps light up in the following order.


⑧ 3G
i
TIME
① 10G
a
17 18 19 20
② 9G
b
③ 8G
c
④ 7G
d
⑤ 6G
e
⑤ 5G
f
⑦ 4G
g
⑨ 2G
h
⑩ 1G
j
⑪ 1G
k
⑫ 1G
l

(3) KEY check
This mode is effected by pressing the ⏏ key in the state of (1), while indicating "1." Every time a new key is pressed subsequently, the indicated number is incremented. Conditions are normal provided "7" is indicated when all types of keys are pressed. Even if a key is pressed again, it is not counted.

* To leave the mode (2) or (3), press the ⏏ and ▷II keys in duplication, thereby the mode returning to all ON mode.


Turn ON the POWER after connecting Pin ㉝, IC401 to GND.
All FL tube lamps ON mode
Keying in
Yes
⏏ Key
Other than the ⏏ key
No
FL tube segment check mode
Key check mode
Duplicated pressing of ⏏ and ▷II

2-2. Test Modes of CD System Controller (IC202)

(1) ADJUST mode
When this mode is effected, the machine is operated normally except for the following.

- When pin ⑲, IC201 (ADJ) is set to "L" after turning ON the POWER switch:

1. GFS is no longer monitored during PLAY, PAUSE or SEARCH, while not stopping even with GFS remaining still at "L" (NG).
2. No high-speed feeding is activated during SEARCH.
3. Focus gain is reset to normal gain during PLAY (normally, the gain is lowered to reduce noise when FOCUS is locked).

- When Pin ⑬, IC201 (AFADJ) is set to "L" after turning ON the POWER switch:

1. Regardless of Pin ⑲ (ADJ) of the CLV-S fixed function, the CLV mode during PLAY becomes CLV-S (rough servo) only while Pin e remains "L".

(2) AFADJUST mode
In this mode, it is possible to check the interface between the display micon (IC401) and CD syscon (IC201).

- Set Pin ⑬, IC201 (AFADJ) to "L" before turning ON the POWER switch.

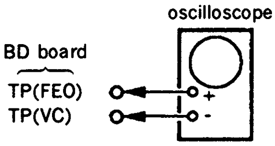
1. Every time the ⏏ key is pressed after turning On the POWER switch, indication on the FL tube is switched correspondingly. Conditions are normal provided the indication repeats the 4 patterns including all lamp ON.

SECTION 3
ELECTRICAL BLOCK CHECKING

Note:

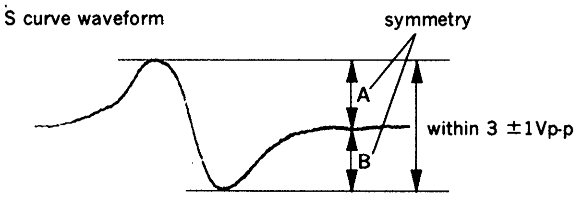
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check


oscilloscope
BD board
TP(FEO)
TP(VC)
+
-

Procedure:

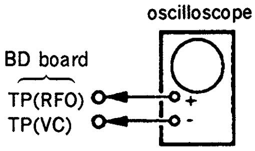
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.


S curve waveform
symmetry
A
B
within 3 ±1Vp-p

5. After check, remove the lead wire connected in step 2.

Note: • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

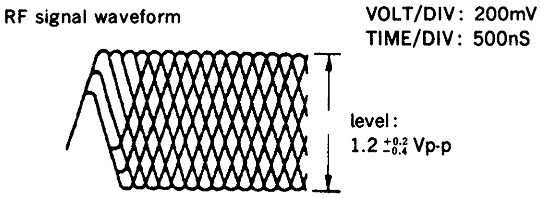
RF Level Check


oscilloscope
BD board
TP(RFO)
TP(VC)
+
-

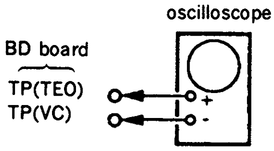
Procedure:

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note:
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

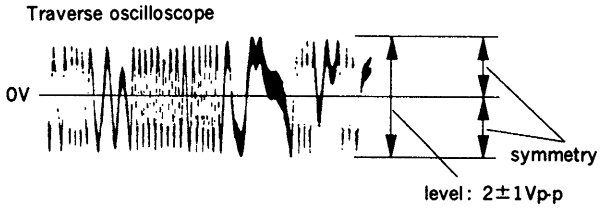

RF signal waveform
VOLT/DIV: 200mV
TIME/DIV: 500nS
level:
1.2 +0.2 -0.4 Vp-p

E-F Balance Check


oscilloscope
BD board
TP(TEO)
TP(VC)
+
-

Procedure:

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

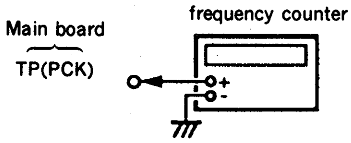

Traverse oscilloscope
0V
symmetry
level: 2±1Vp-p

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure:

1. Connect frequency counter to test point (PCK) with lead wire.


frequency counter
Main board
TP(PCK)
+
-

2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.

There is no problem.

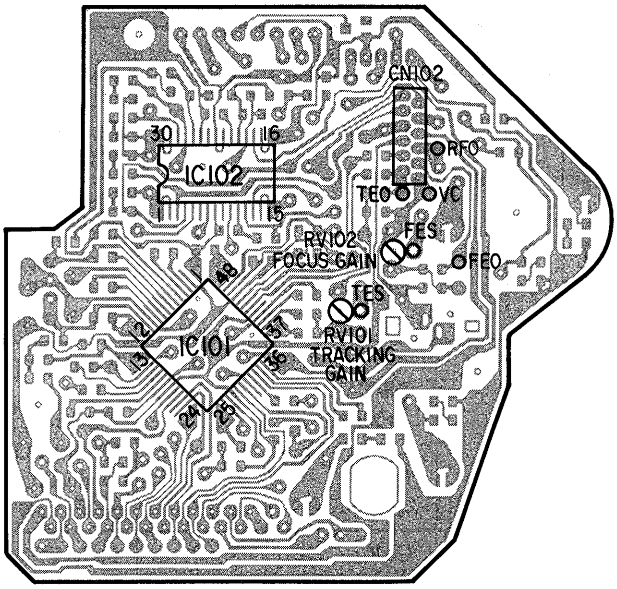
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

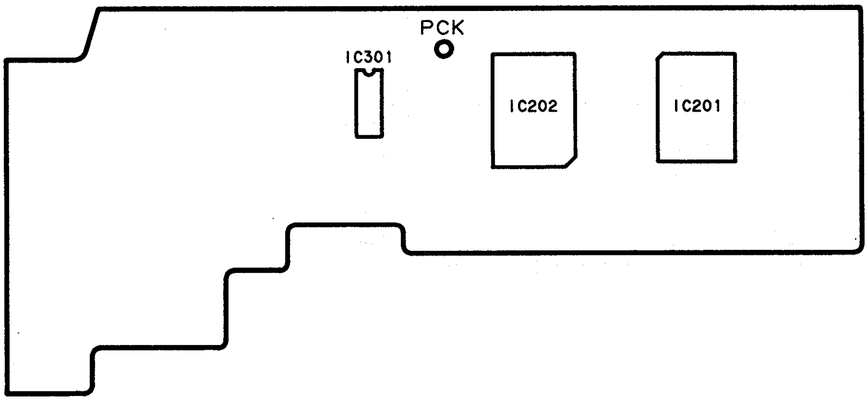
Checking Location:

【BD Board】

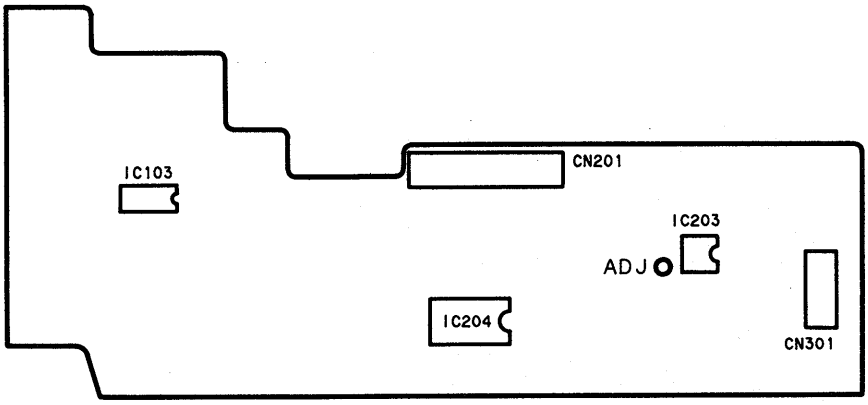
—Conductor Side—


CN102
30
16
IC102
1
15
RFO
TEO
VC
RV102
FOCUS GAIN
FES
FEO
48
TES
37
36
12
13
IC101
RV101
TRACKING
GAIN
24
25

【MAIN Board】 —Component Side—


PCK
IC301
IC202
IC201

【MAIN Board】 —Conductor Side—


IC103
CN201
IC203
ADJ
IC204
CN301

SECTION 4
DIAGRAMS

4-1. PIN DESCRIPTION

• IC201 CD System Controller (μPD75116GF-F21-3BE)

Functions effected by the captioned controller include IC101 (RF signal processing, servo), IC202 (DSP, digital filter) and loading control in the CD unit, data exchange with IC401 (display controller), audio bus entry, etc.

Pin No.	Pin Name	I/O	Description
1-2	G MUTE, GCLR	O	Not in use with the model (open).
3	DPCLK	O	Display data transfer clock output to IC401 (display micon)
4-6		O	IC204 (CXD2554M) control output.
7	RESET	I	System reset input. "L": Reset
8	X2	I	Clock input
9	X1	I	Clock input (4 MHz)
10	DFCT SW	O	DEFECT circuit ON/OFF switching output of IC101 (CXA1372Q). It is turned OFF ("H") to focus-search the DISC flaw detection circuit.
11	AMUTE	O	Muting control output. "H": Mute
12	BSOUT	O	Audio bus output
13	AFADJ	I	Test mode input. Various test operations are effected upon "L" after turning ON the POWER.
14	LDON	O	Optical pickup laser diode ON/OFF switching output. "H": ON
15	XLT	O	Serial data latch output to IC202 (CXD2500AQ)
16	CLK	O	Serial data transfer clock output to IC202 (CXD2500AQ)
17	DATA	O	Serial data output to IC202 (CXD2500AQ)
18	MODE	I	Not in use with the model (GND)
19	ADJ	I	Test mode input. Upon "L," GFS checking is disabled while continuously rotating the spindle no matter whether frame synch is issued during PLAY, PAUSE or SEARCH.
20	GFS	I	GFS signal input from IC202 (CXD2500AQ). "L": NG "H": OK
21	FOK	I	Focus OK signal input from IC101 (CXA1372Q). "H": OK
22 - 23		O	Not in use with the model (open)
24	LODOUT	O	Output to rotate M291 (loading motor) in the loading out direction. *1
25	LODIN	O	Output to rotate M291 (loading motor) in the loading in direction. *1
26	Vss	–	Power terminal (GND)
27	IN SW	I	S292 (Loading in switch) input
28	OUT SW	I	S291 (Loading out switch) input
29	KEY REQ	I	Key data request input from IC401 (display controller)
30	BS IN	I	Audio bus input
31 - 36			Not in use with the model (GND)
37	SENS	I	SENS input from IC101 (CXA1372Q) and IC202 (CXD2500AQ)
38	TIMER	I	Not in use with the model (pull up)
39	D/F 16BIT	I I	IC202 (CXD2500AQ) digital filter mode setting input. It is fixed at 16 bit, 4fs with the model (pull up).
40			Not in use with the model (GND)
41	SUBQ	I	Subcode Q data input from IC202 (CXD2500AQ)
42		O	Not in use with the model (open)
43	SQCLK	O	Subcode Q data readout clock output to IC202 (CXD2500AQ)
44	SCOR	I	Subcode sync S0 + S1 detection input from IC202 (CXD2500AQ)
45 - 56		O	Not in use with the model (open)
57	N.C.	I	Not in use with the model (+5V)
58	VDD	–	Power terminal (+5V)
59 - 62	DPDATA3-0	I/O	Key data input and display data output with IC401 (display controller)
63 - 64		O	Not in use with the model (open)

*1 Loading motor control

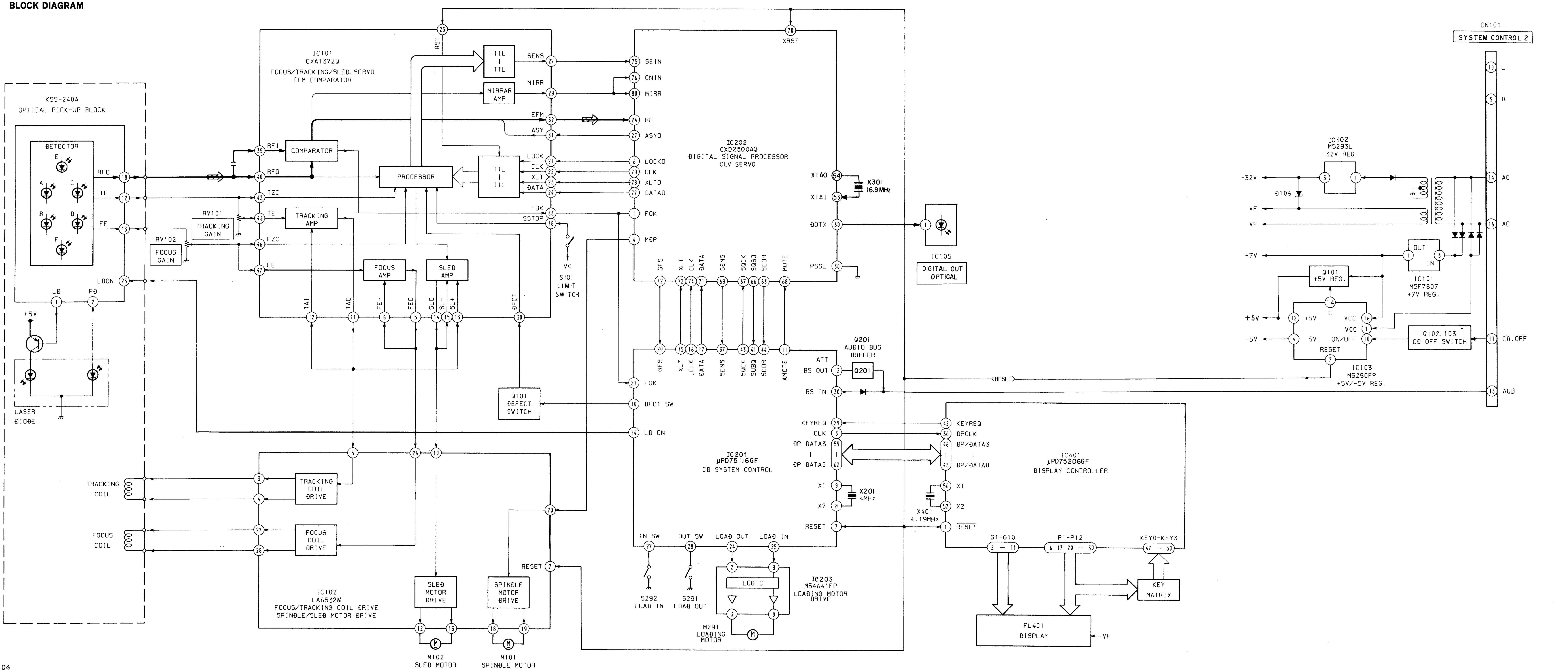
	IN	OUT	BRAKE
LODOUT ㉔	L	H	H
LODIN ㉕	H	L	H

• IC401 Display controller (μPD75206GF-716-3BE)

In charge of displaying the FL tube and keying in, it exchanges data with the IC201 (CD system controller) in 4-bit parallel mode.

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{RESET}}$	I	System reset input. "L": Reset
2 - 11	G1-10	O	Digital output to the FL tube
12 - 15		O	Not in use with the model (open)
16, 17	l, k	O	FL tube segment output
18	VLOAD	–	Power supply for the FL tube controller (builtin) (-32V)
19	VPRE	–	Power supply for the FL tube predriver (-3.5V)
20 - 25	j ~ e	O	FL tube segment output
26	VDD	–	Power terminal (+5V)
27, 28	d, c	O	FL tube segment output
29, 30	b, a	O	FL tube segment, key scan output
31, 32		I	Not in use with the model (GND)
33	$\overline{\text{TEST}}$	I	Test mode input. "L": Test mode
34	SELECT	I	Not in use with the model (pull up)
35	BSIN	I	Not in use with the model (pull up)
36	DPCLK	I	Display data transfer clock input from IC201 (CD system controller)
37, 38		I	Not in use with the model (pull up)
39		O	Not in use with the model (pull up)
40, 41		O	Not in use with the model (open)
42	KEY REQ	O	Key data request output to IC201 (CD system controller)
43 - 46	DPDATA0-3	I/O	Key data output and display data input with IC201 (CD system controller)
47 - 50	KEY0-3	I	Key data input
51, 52		I	Not in use with the model (pull up)
53, 54		I	Not in use with the model (GND)
55		O	Not in use with the model (open)
56	X1	I	System clock input (4.19 MHz)
57	X2	I	System clock input
58	Vss	–	Power supply terminal (GND)
59		I	Not in use with the model (GND)
60 - 64		O	Not in use with the model (open)

4-2. BLOCK DIAGRAM


KSS-240A
OPTICAL PICK-UP BLOCK
DETECTOR
E
A
C
B
D
F
RFO
TE
FE
LDON
LD
PD
+5V
LASER DIODE
RV101 TRACKING GAIN
RV102 FOCUS GAIN
IC101
CXA1372Q
FOCUS/TRACKING/SLED SERVO
EFM COMPARATOR
RST
RFI
RFO
TZC
TE
FZC
FE
COMPARATOR
PROCESSOR
TRACKING AMP
FOCUS AMP
SLED AMP
IIL ↕ TTL
MIRRAR AMP
TTL ↕ IIL
SENS
MIRR
EFM
ASY
LOCK
CLK
XLT
DATA
FOK
SSTOP
TAI
TAO
FE-
FEO
SLO
SL-
SL+
DFCT
VC
S101 LIMIT SWITCH
Q101 DEFECT SWITCH
IC202
CXD2500AQ
DIGITAL SIGNAL PROCESSOR
CLV SERVO
XRST
SEIN
CNIN
MIRR
RF
ASYO
LOCKO
CLK
XLTO
DATAO
FOK
MDP
XTAO
XTAI
X301 16.9MHz
DOTX
PSSL
GFS
XLT
CLK
DATA
SENS
SQCK
SQSO
SCOR
MUTE
IC105
DIGITAL OUT OPTICAL
IC201
μPD75116GF
CD SYSTEM CONTROL
GFS
XLT
CLK
DATA
SENS
SQCK
SUBQ
SCOR
AMUTE
FOK
DFCT SW
LD ON
ATT
BS OUT
BS IN
Q201 AUDIO BUS BUFFER
Q201
KEYREQ
CLK
DP DATA3
DP DATA0
X1
X2
X201 4MHz
RESET
IN SW
OUT SW
LOAD OUT
LOAD IN
S292 LOAD IN
S291 LOAD OUT
LOGIC
IC203
M54641FP
LOADING MOTOR DRIVE
M291 LOADING MOTOR
IC401
μPD75206GF
DISPLAY CONTROLLER
KEYREQ
DPCLK
DP/DATA3
DP/DATA0
X1
X2
X401 4.19MHz
RESET
G1-G10
P1-P12
KEY0-KEY3
KEY MATRIX
FL401 DISPLAY
VF
TRACKING COIL
FOCUS COIL
TRACKING COIL DRIVE
FOCUS COIL DRIVE
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
RESET
IC102
LA6532M
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
M102 SLED MOTOR
M101 SPINDLE MOTOR
CN101
SYSTEM CONTROL 2
L
R
AC
AC
CD.OFF
AUB
IC102
M5293L
-32V REG
-32V
D106
VF
VF
+7V
OUT
IN
IC101
M5F7807
+7V REG.
Q101 +5V REG.
+5V
-5V
+5V
-5V
VCC
VCC
ON/OFF
RESET
IC103
M5290FP
+5V/-5V REG.
Q102, 103 CD OFF SWITCH
RESET

• Semiconductor Location

Except BD Board

Ref. No.	Location
D101	C-7
D102	C-6
D103	C-7
D104	D-9
D106	C-8
D113	C-2
D131	C-5
D132	C-2
D201	H-5
D206	H-6
D401	E-16
D402	F-17
D403	E-13
IC101	D-6
IC102	C-8
IC103	D-6
IC105	B-7
IC201	H-3
IC202	F-3
IC203	H-6
IC401	E-14
Q101	D-5
Q102	C-5
Q103	B-6
Q201	H-5

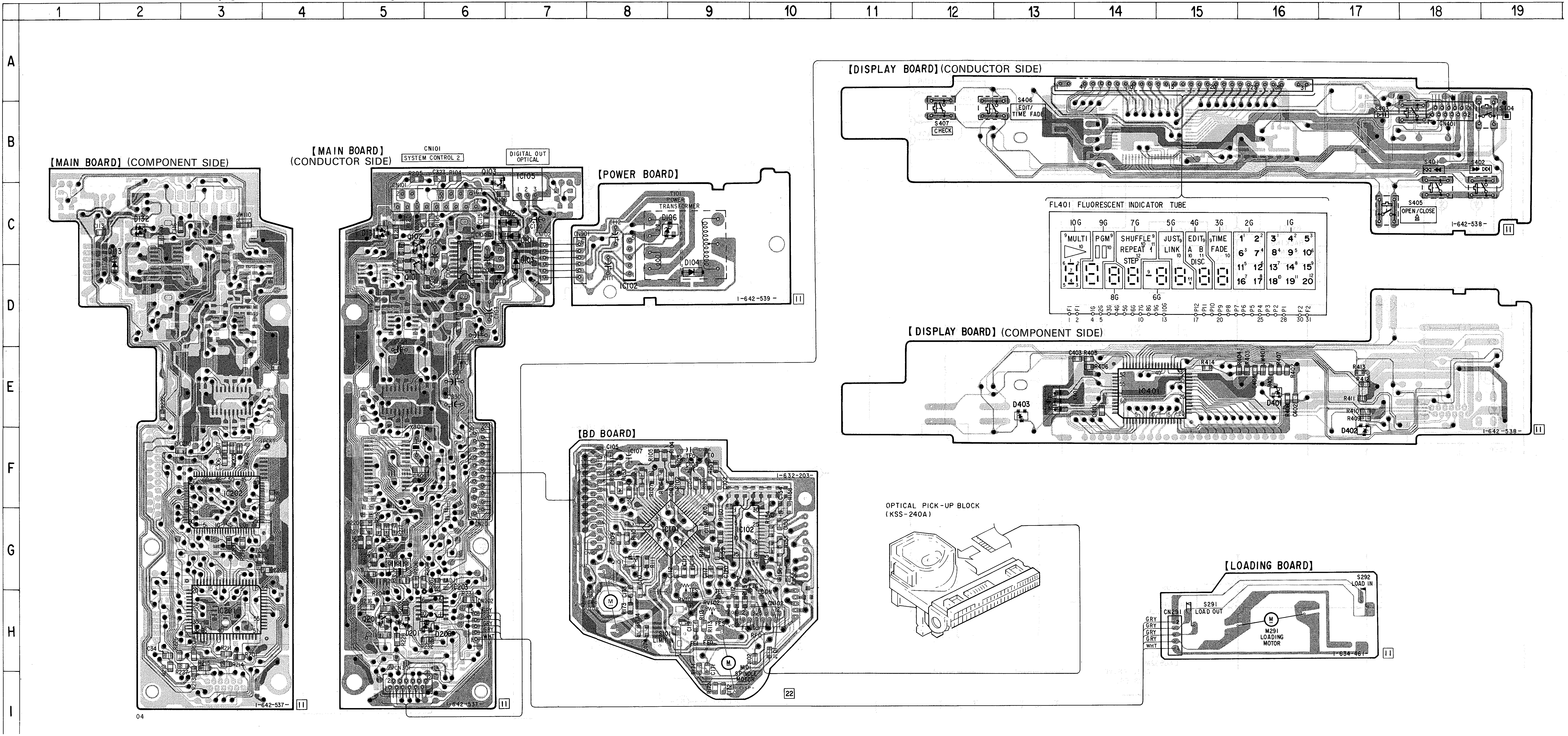
BD Board

Ref. No.	Location
IC101	G-8
IC102	G-9
Q101	G-8

Note:

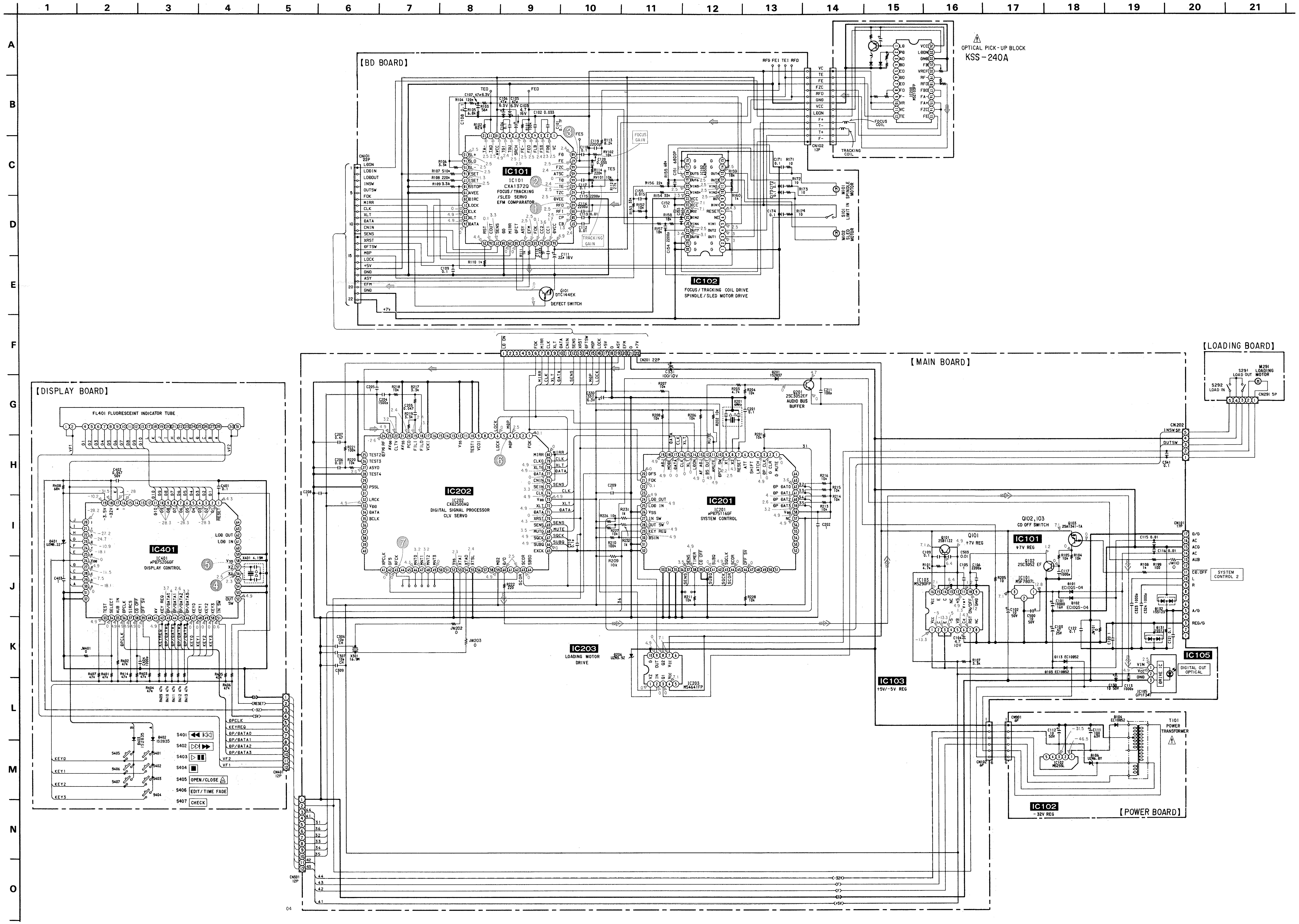
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

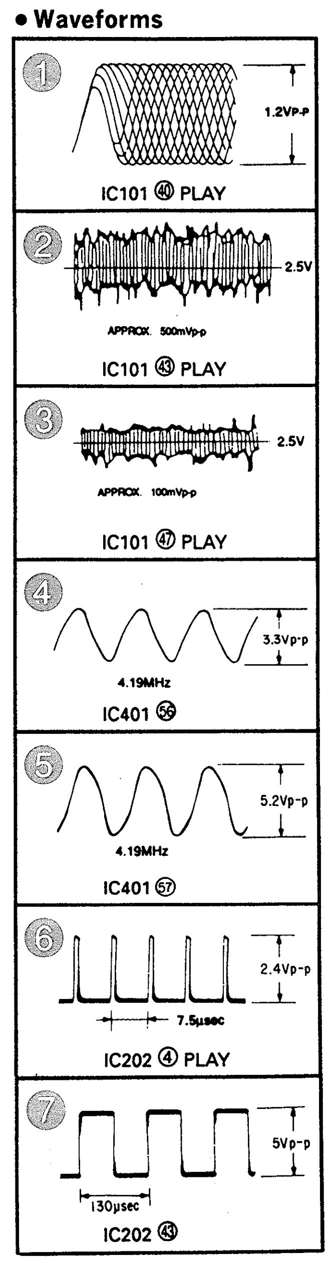
4-3. PRINTED WIRING BOARDS • Refer to page 22 for Semiconductor Lead Layouts.



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
[MAIN BOARD] (COMPONENT SIDE)
[MAIN BOARD] (CONDUCTOR SIDE)
CN101 SYSTEM CONTROL 2
DIGITAL OUT OPTICAL
IC105
[POWER BOARD]
T101 POWER TRANSFORMER
D106
D104
IC102
1-642-539-
[DISPLAY BOARD] (CONDUCTOR SIDE)
S406 EDIT/TIME FADE
S407 CHECK
S403
S404
CN401
S401
S402
S405 OPEN/CLOSE
1-642-538-
FL401 FLUORESCENT INDICATOR TUBE
10G
9G
7G
5G
4G
3G
2G
1G
MULTI
PGM
SHUFFLE
REPEAT
STEP
JUST
LINK
EDIT
A B
DISC
TIME
FADE
8G
6G
[DISPLAY BOARD] (COMPONENT SIDE)
IC401
D401
D402
D403
1-642-538-
[BD BOARD]
IC101
IC102
1-632-203-
M
M01 SPINDLE MOTOR
22
OPTICAL PICK-UP BLOCK (KSS-240A)
[LOADING BOARD]
S292 LOAD IN
S291 LOAD OUT
CN291
M291 LOADING MOTOR
GRY
GRY
GRY
GRY
WHT
1-634-461-
D132
IC202
IC201
1-642-537-
1-642-537-
D201
D206
04
11

4-4. SCHEMATIC DIAGRAM • Refer to page 19 for IC Block Diagrams.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
[BD BOARD]
OPTICAL PICK-UP BLOCK
KSS-240A
FOCUS COIL
TRACKING COIL
FOCUS GAIN
TRACKING GAIN
IC101
CXA1372Q
FOCUS/TRACKING /SLED SERVO EFM COMPARATOR
IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
Q101
DTC144EK
DEFECT SWITCH
M101 SPINDLE MOTOR
M102 SLED MOTOR
S101 LIMIT IN
CN101 22P
CN102 12P
[DISPLAY BOARD]
FL401 FLUORESCEINT INDICATOR TUBE
IC401
μPD75206GF
DISPLAY CONTROL
S401
S402
S403
S404
S405 OPEN/CLOSE
S406 EDIT/TIME FADE
S407 CHECK
KEY0
KEY1
KEY2
KEY3
[MAIN BOARD]
IC202
CXD2500AQ
DIGITAL SIGNAL PROCESSOR
CLV SERVO
IC201
μPD75116GF
SYSTEM CONTROL
IC203
LOADING MOTOR DRIVE
M54641FP
Q201
2SC5052EF
AUDIO BUS BUFFER
Q101, 103
CD OFF SWITCH
IC101
+7V REG
IC103
±5V/-5V REG
M5290FP
IC105
GP1F34T
DIGITAL OUT OPTICAL
SYSTEM CONTROL 2
CN202
CN201 22P
[LOADING BOARD]
S291 LOAD OUT
S292 LOAD IN
M291 LOADING MOTOR
CN291 5P
[POWER BOARD]
T101 POWER TRANSFORMER
IC102
-32V REG
CN301 12P
CN401 12P
CN801



Note:

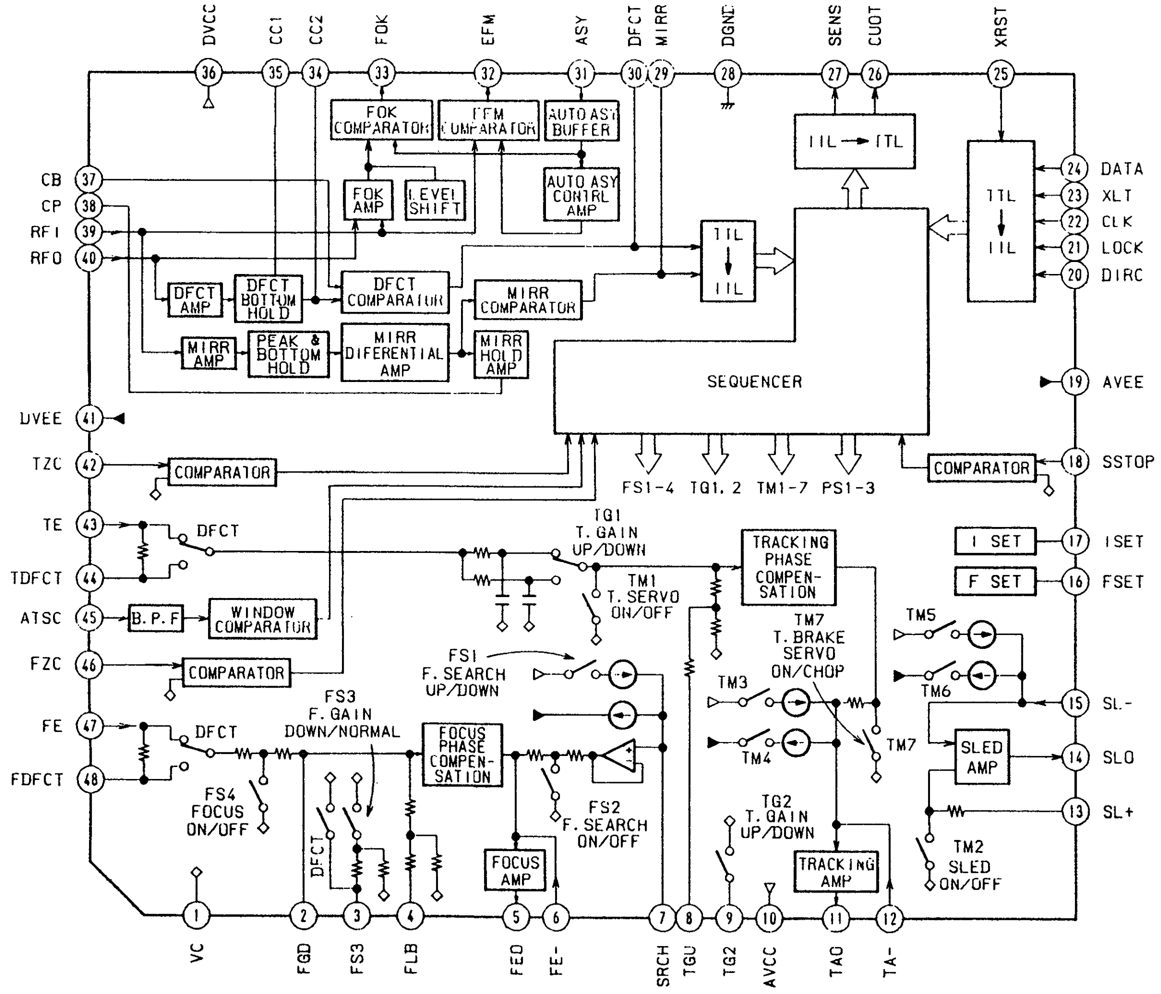
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

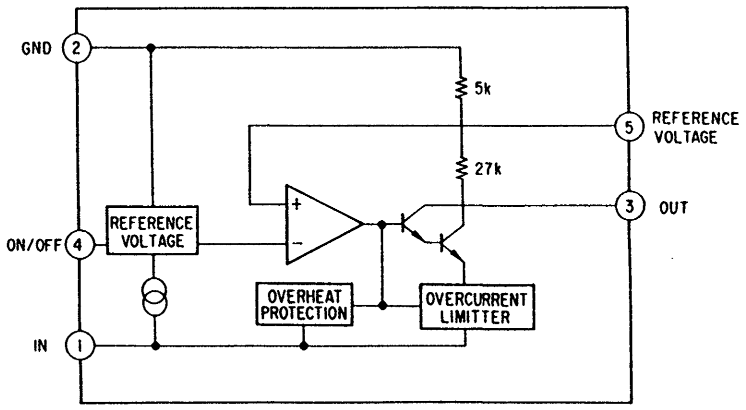
- : B+ Line
- : B– Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input Impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- **Signal path.**
  ⇨ : CD

• IC Block Diagrams

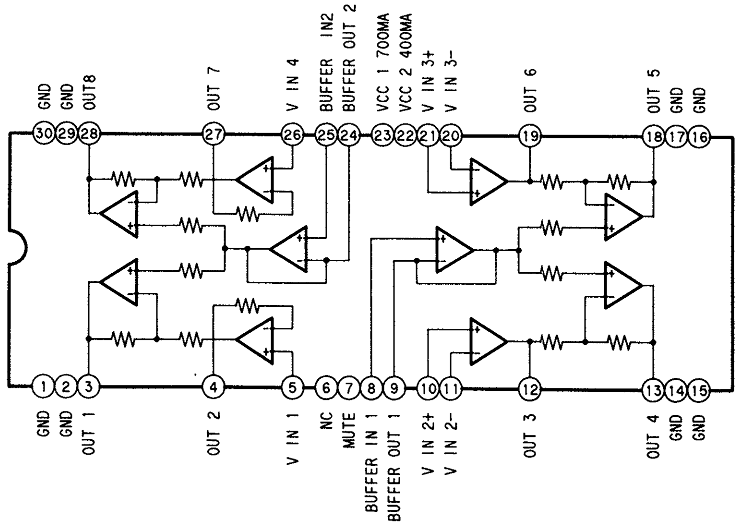
IC101 CXA1372Q (BD Board)


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
CUOT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTRL AMP
TTL → ITL
TTL ↓ IIL
IIL ↓ TTL
CB
CP
RFI
RFO
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
DVEE
TZC
COMPARATOR
FS1-4 TG1, 2 TM1-7 PS1-3
TE
DFCT
TDFCT
ATSC
B.P.F
WINDOW COMPARATOR
FZC
FE
FDFCT
TG1 T. GAIN UP/DOWN
TM1 T. SERVO ON/OFF
TRACKING PHASE COMPEN-SATION
I SET
F SET
ISET
FSET
TM5
FS1 F. SEARCH UP/DOWN
TM7 T. BRAKE SERVO ON/CHOP
TM3
TM6
TM4
TM7
SL-
SLED AMP
SLO
SL+
FS3 F. GAIN DOWN/NORMAL
FOCUS PHASE COMPEN-SATION
FS4 FOCUS ON/OFF
FS2 F. SEARCH ON/OFF
FOCUS AMP
TG2 T. GAIN UP/DOWN
TRACKING AMP
TM2 SLED ON/OFF
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

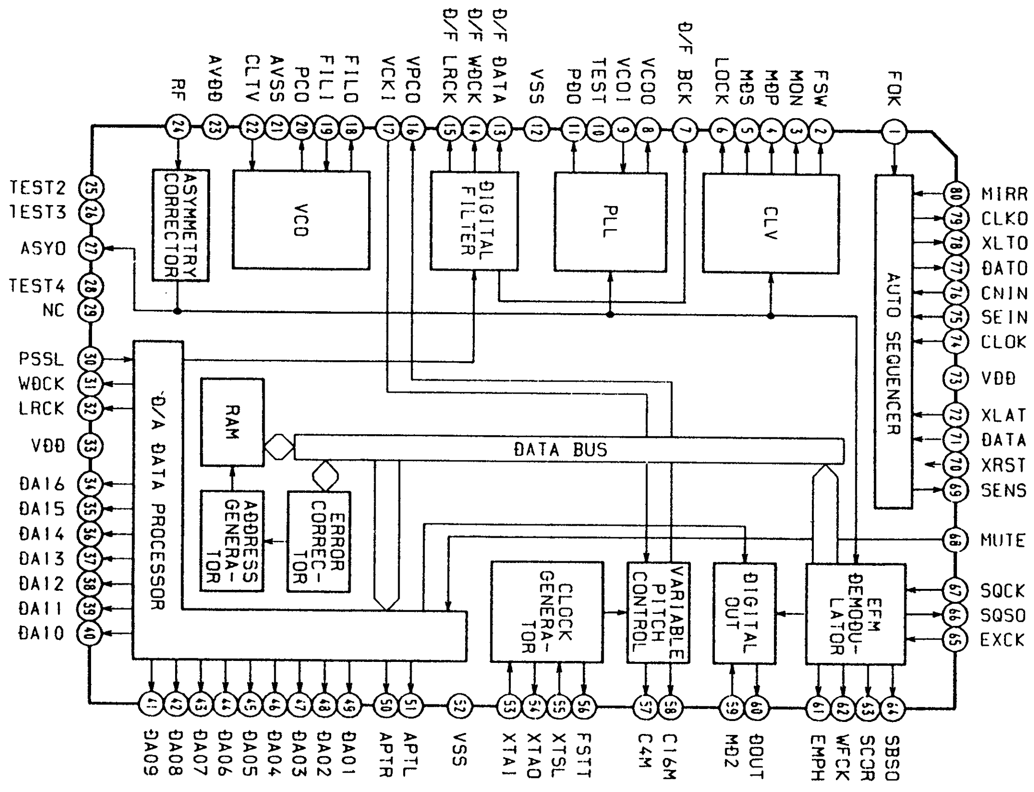
IC102 M5293L (Power Board)


GND
ON/OFF
IN
REFERENCE VOLTAGE
5k
27k
OVERHEAT PROTECTION
OVERCURRENT LIMITTER
REFERENCE VOLTAGE
OUT

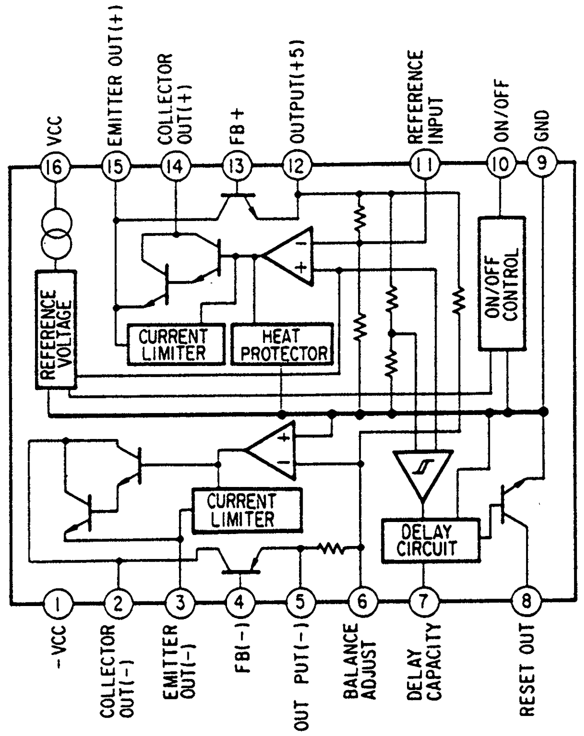
IC102 LA6532M (BD Board)


GND
GND
OUT8
OUT 7
V IN 4
BUFFER IN2
BUFFER OUT 2
VCC 1 700MA
VCC 2 400MA
V IN 3+
V IN 3-
OUT 6
OUT 5
GND
GND
GND
GND
OUT 1
OUT 2
V IN 1
NC
MUTE
BUFFER IN 1
BUFFER OUT 1
V IN 2+
V IN 2-
OUT 3
OUT 4
GND
GND

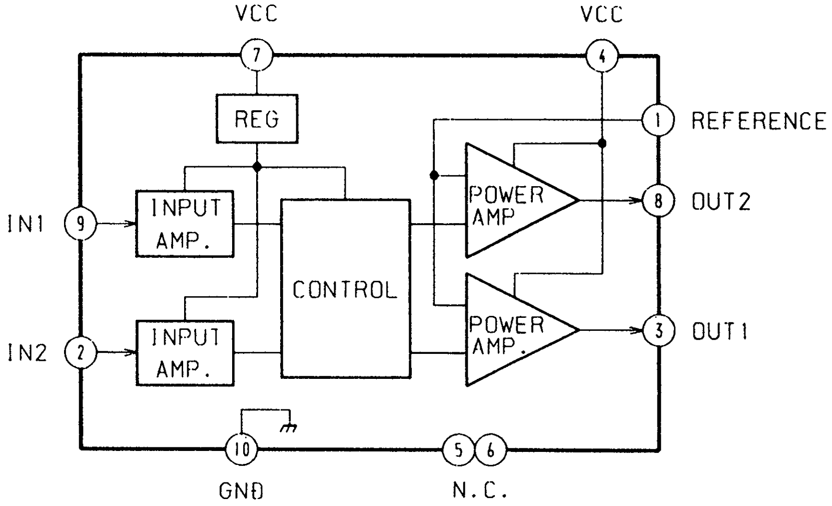
IC202 CXD2500AQ


RF
AVDD
CLTV
AVSS
PCO
FILI
FILO
VCKI
VPCO
D/F LRCK
D/F WDCK
D/F DATA
VSS
PDO
TEST
VCOI
VCOO
D/F BCK
LOCK
MDS
MDP
MON
FSW
FOK
TEST2
TEST3
ASYO
TEST4
NC
ASYMMETRY CORRECTOR
VCO
DIGITAL FILTER
PLL
CLV
AUTO SEQUENCER
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10
D/A DATA PROCESSOR
RAM
DATA BUS
ADDRESS GENERATOR
ERROR CORRECTOR
CLOCK GENERATOR
VARIABLE PITCH CONTROL
DIGITAL OUT
EFM DEMODULATOR
MUTE
SQCK
SQSO
EXCK
DA09
DA08
DA07
DA06
DA05
DA04
DA03
DA02
DA01
APTR
APTL
VSS
XTAI
XTAO
XTSL
FSTT
C4M
C16M
MD2
DOUT
EMPH
WFCK
SCOR
SBSO

IC103 M5290FP

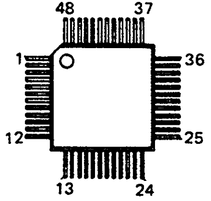

VCC
EMITTER OUT(+)
COLLECTOR OUT(+)
FB+
OUTPUT(+5)
REFERENCE INPUT
ON/OFF
GND
REFERENCE VOLTAGE
CURRENT LIMITER
HEAT PROTECTOR
ON/OFF CONTROL
CURRENT LIMITER
DELAY CIRCUIT
-VCC
COLLECTOR OUT(-)
EMITTER OUT(-)
FB(-)
OUT PUT(-)
BALANCE ADJUST
DELAY CAPACITY
RESET OUT

IC203 M54641FP


VCC
VCC
7
4
REG
1
REFERENCE
INPUT AMP.
POWER AMP
8
OUT2
IN1
9
CONTROL
INPUT AMP.
POWER AMP.
3
OUT1
IN2
2
10
5
6
GND
N.C.

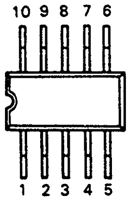
4-5. SEMICONDUCTOR LEAD LAYOUTS

CXA1372AQ

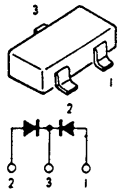

48
37
1
36
12
25
13
24

(TOP VIEW)

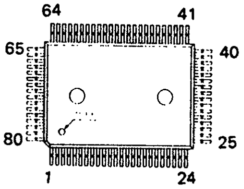
M54641FP


10 9 8 7 6
1 2 3 4 5

MA152WK

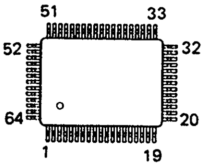


CXD2500AQ


64
41
65
40
80
25
1
24

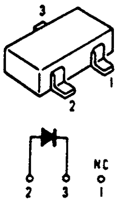
MARKING SIDE VIEW

μPD75206GF
-716-3BE

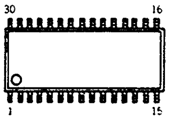

51
33
52
32
64
20
1
19

(TOP VIEW)

UZM3.9Z
UZM6.8Y

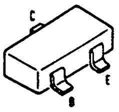


LA6532M

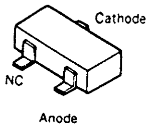


(TOP VIEW)

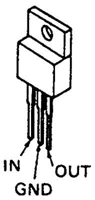
DTC144EK
2SC3052-EF



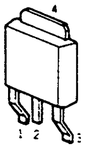
UZM8.2Z


Cathode
NC
Anode

M5F7807L

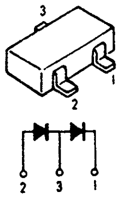


2SA1341

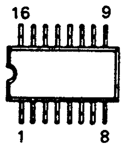


1 BASE
2 COLLECTOR
3 EMITTER
4 COLLECTOR

1SS226

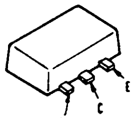


M5290FP

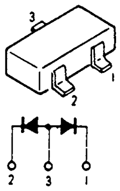


(TOP VIEW)

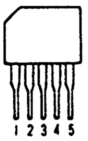
2SB1122-S



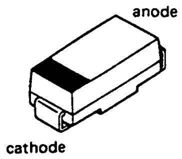
1S2836



M5293L



EC10DS2
EC10QS-04


anode
cathode

SECTION 5
EXPLODED VIEWS

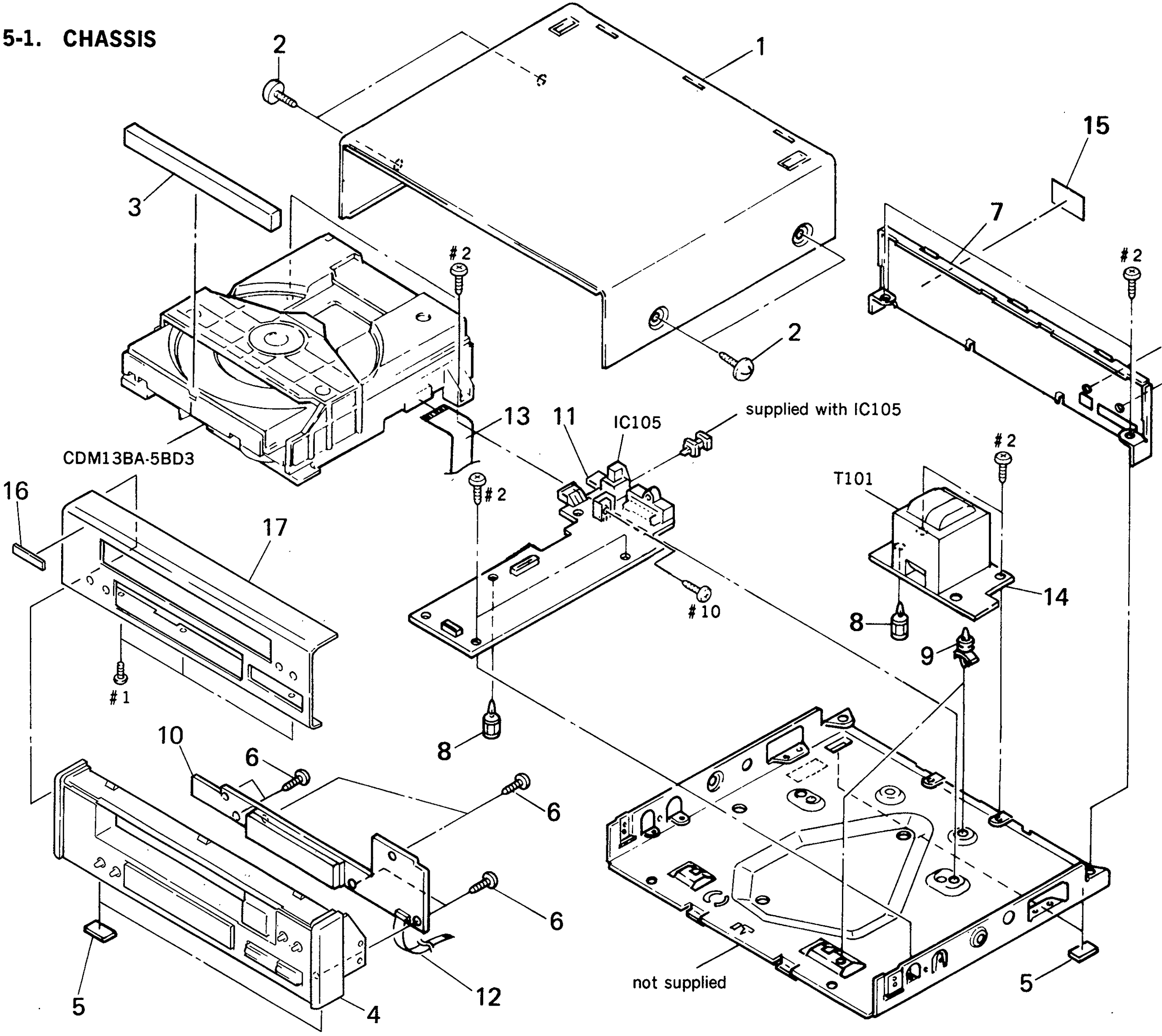
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example :

  KNOB, BALANCE (WHITE)... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

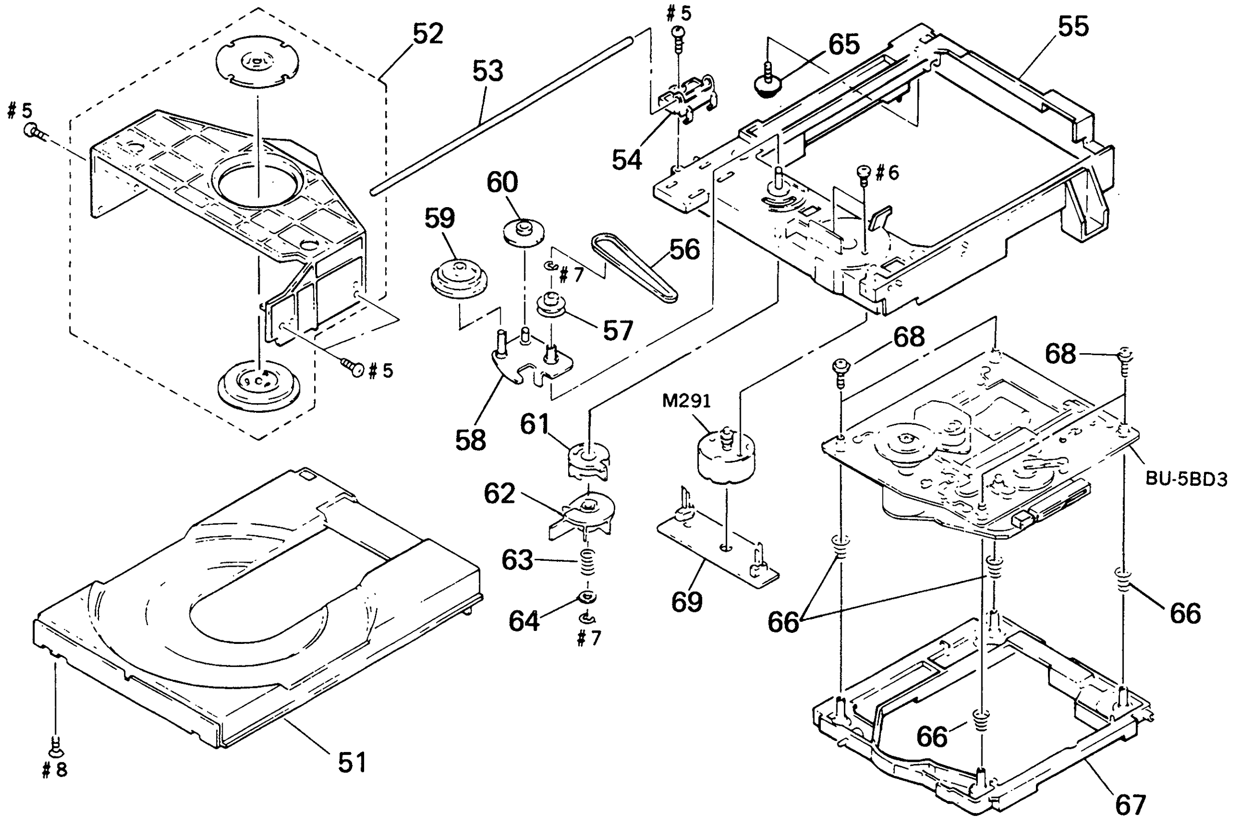
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

5-1. CHASSIS



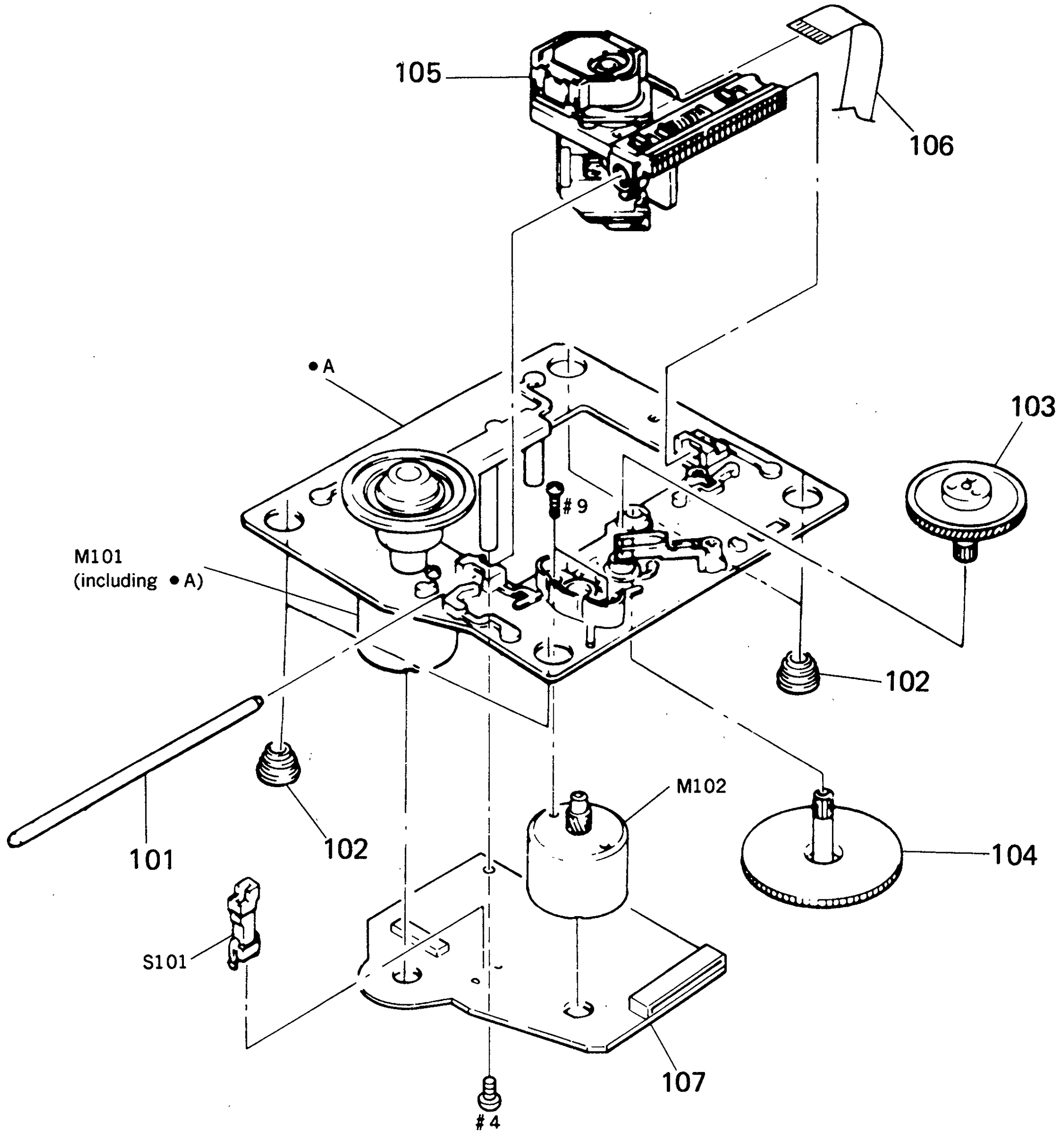
Ref. No.	Part No.	Description	Remark
1	4-932-844-71	CASE	
2	3-363-099-01	SCREW (CASE +3X8 TP2)	
3	X-4941-799-1	LID (TRAY) ASSY	
4	X-4941-800-1	PANEL ASSY, FRONT	
5	4-930-336-21	FOOT (FELT)	
6	4-951-620-01	SCREW (2.6X8), +BVTP	
* 7	4-949-940-11	PANEL (CDP), BACK	
* 8	3-669-610-00	SPACER	
* 9	4-924-098-11	HOLDER, PC BOARD	
* 10	A-4649-269-A	DISPLAY BOARD, COMPLETE	
* 11	A-4649-262-A	MOUNTED PCB (A), MAIN	
12	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
13	1-690-753-11	WIRE (FLAT TYPE) (22 CORE)	
* 14	1-642-539-11	POWER BOARD	
* 15	4-941-548-01	LABEL, CLASS1	
16	4-942-636-11	EMBLEM (NO. 3. 5), SONY	
17	4-944-445-11	PANEL, FRONT	
IC105	8-749-921-12	IC GPIF32T	
⚠T101	1-450-341-11	TRANSFORMER, POWER	

5-2. CD BLOCK (CDM13BA-5BD3)


#5
52
53
#5
65
55
54
60
59
#6
56
#7
57
#5
68
68
M291
58
61
BU-5BD3
62
63
69
66
66
64
#7
66
#8
51
67

Ref. No.	Part No.	Description	Remark
51	4-944-012-01	TABLE, DISC	
52	A-4604-752-A	HOLDER (MG) ASSY	
53	4-929-764-01	SHAFT (TABLE GUIDE)	
54	4-944-006-01	BEARING	
55	X-4941-462-1	CHASSIS (MD) ASSY	
56	4-927-649-01	BELT	
57	4-929-724-01	PULLEY (B)	
58	X-4929-703-1	ARM ASSY, SWING	
59	4-927-620-01	GEAR (P)	
60	4-927-628-01	GEAR (C)	
61	4-929-727-01	CAM (A)	
62	4-929-729-01	CAM (B)	
63	3-659-338-00	SPRING, COMPRESSION	
64	4-927-654-01	WASHER (LIMITER)	
* 65	4-917-583-21	BRACKET, YOKE	
66	4-917-541-01	SPRING (B)	
67	4-929-747-01	HOLDER (BU)	
68	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 69	1-634-461-11	LOADING BOARD	
M291	A-4608-362-A	MOTOR (L) ASSY	

5-3. OPTICAL PICK-UP BLOCK (BU-5BD3)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	4-917-565-01	SHAFT, SLED	
102	4-933-126-01	INSULATOR (A)	
103	4-917-567-01	GEAR (M)	
104	4-917-564-01	GEAR (P), FLATNESS	
⚠105	8-848-144-11	DEVICE, OPTICAL KSS-240A	

Ref. No.	Part No.	Description	Remark
106	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
* 107	A-4617-371-A	BD BOARD, COMPLETE	
M101	X-4917-523-3	MOTOR ASSY, SPINDLE	
M102	X-4917-504-1	MOTOR ASSY, SLED	
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

BD

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description				Remark
*	A-4617-371-A	BD BOARD, COMPLETE				
		******************				

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C103	1-126-163-11	ELECT	4.7uF	20%	50V	
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C105	1-126-154-11	ELECT	47uF	20%	6.3V	
C106	1-126-154-11	ELECT	47uF	20%	6.3V	
C107	1-126-154-11	ELECT	47uF	20%	6.3V	
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C111	1-131-367-00	TANTALUM	22uF	10%	20V	
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C114	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C115	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C119	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C152	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C154	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C155	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P	

< IC >

Ref. No.	Part No.	Description		Remark
IC101	8-752-053-73	IC	CXA1372AQ	
IC102	8-759-822-36	IC	LA6532M	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description				Remark
J101	1-216-295-00	METAL CHIP	0	5%	1/10W	
J102	1-216-295-00	METAL CHIP	0	5%	1/10W	

< TRANSISTOR >

Ref. No.	Part No.	Description		Remark
Q101	8-729-901-01	TRANSISTOR	DTC144EK	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R102	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W	
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R157	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R158	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-001-00	METAL CHIP	10	5%	1/10W	
R172	1-216-001-00	METAL CHIP	10	5%	1/10W	
R173	1-216-001-00	METAL CHIP	10	5%	1/10W	
R174	1-216-001-00	METAL CHIP	10	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-241-630-11	RES, ADJ, CARBON 10K	
RV102	1-241-630-11	RES, ADJ, CARBON 10K	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

****

Ref. No.	Part No.	Description	Remark
*	A-4649-269-A	DISPLAY BOARD, COMPLETE ***********************	
*	A-4649-262-A	MAIN BOARD, COMPLETE ********************	
*	1-642-539-11	POWER BOARD ***********	
*	4-880-403-11	HEAT SINK	
*	4-932-810-11	CUSHION (FL)	
*	4-944-444-01	HOLDER (FL TUBE)	
	7-682-548-04	SCREW +BVTT 3X8 (S)	

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-126-939-11	ELECT	10000uF	20%	16V
C102	1-124-907-11	ELECT	10uF	20%	50V
C103	1-124-477-11	ELECT	47uF	20%	25V
C104	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C105	1-164-346-11	CERAMIC CHIP	1uF		16V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-126-063-11	ELECT	100uF	20%	63V
C112	1-124-907-11	ELECT	10uF	20%	50V
C113	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C115	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C116	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C117	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C120	1-164-346-11	CERAMIC CHIP	1uF		16V
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C122	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C130	1-124-907-11	ELECT	10uF	20%	50V
C201	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C202	1-164-346-11	CERAMIC CHIP	1uF		16V
C203	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C204	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C205	1-164-346-11	CERAMIC CHIP	1uF		16V
C206	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C207	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C211	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C306	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C307	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C309	1-162-638-11	CERAMIC CHIP	1uF		16V
C323	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C324	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C330	1-124-442-00	ELECT	330uF	20%	6.3V
C331	1-124-443-00	ELECT	100uF	20%	10V
C341	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C401	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C402	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C403	1-164-346-11	CERAMIC CHIP	1uF		16V
C404	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C500	1-124-907-11	ELECT	10uF	20%	50V
C503	1-163-031-11	CERAMIC CHIP	0.01uF		50V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN101	1-569-624-11	SOCKET, CONNECTOR 17P (SYSTEM CONTROL 2)	
CN102	1-568-662-11	CONNECTOR, BOARD TO BOARD 6P	
* CN201	1-568-822-11	SOCKET, CONNECTOR 22P	
* CN202	1-564-339-00	PIN, CONNECTOR 5P	
* CN301	1-573-099-11	HOUSING, CONNECTOR 12P	
* CN401	1-573-098-11	HOUSING, CONNECTOR 12P	
CN901	1-568-668-11	CONNECTOR, BOARD TO BOARD 6P	

< DIODE >

Ref. No.	Part No.	Description		Remark
D101	8-719-210-39	DIODE	EC10QS-04	
D102	8-719-210-39	DIODE	EC10QS-04	
D103	8-719-210-33	DIODE	EC10DS2	
D104	8-719-210-33	DIODE	EC10DS2	
D106	8-719-021-59	DIODE	UZM6.8Y	
D113	8-719-210-33	DIODE	EC10DS2	
D131	8-719-800-76	DIODE	1SS226	
D132	8-719-800-76	DIODE	1SS226	
D201	8-719-400-18	DIODE	MA152WK	
D206	8-719-021-13	DIODE	UZM3.9Z	
D401	8-719-021-77	DIODE	UZM8.2Z	
D402	8-719-104-34	DIODE	1S2836	
D403	8-719-104-34	DIODE	1S2836	

< FLUORESCENT INDICATOR >

Ref. No.	Part No.	Description	Remark
FL401	1-519-652-11	INDICATOR TUBE, FLUORESCENT	

< IC >

Ref. No.	Part No.	Description		Remark
IC101	8-759-604-86	IC	M5F7807	
IC102	8-759-633-42	IC	M5293L	
IC103	8-759-636-24	IC	M5290FP	
IC105	8-749-921-12	IC	GP1F32T	
IC201	8-759-059-86	IC	uPD75116GF-F21-3BE	
IC202	8-752-337-26	IC	CXD2500AQ	

Ref. No.	Part No.	Description	Remark
IC203	8-759-636-20	IC M54641FP	
IC401	8-759-154-14	IC uPD75206GF-716-3BE	
		< JUMPER RESISTOR >	
JW101	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW110	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW202	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW203	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW401	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< TRANSISTOR >	
Q101	8-729-804-41	TRANSISTOR 2SB1122-S	
Q102	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q103	8-729-805-69	TRANSISTOR 2SA1341	
Q201	8-729-620-06	TRANSISTOR 2SC3052-EF	
		< RESISTOR >	
R101	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R104	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R105	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R108	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R199	1-216-025-00	METAL CHIP 100 5% 1/10W	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R204	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R205	1-216-001-00	METAL CHIP 10 5% 1/10W	
R206	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R207	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R208	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R209	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R210	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R211	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R213	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R214	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R215	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R216	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R217	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R218	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R219	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R220	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R221	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R222	1-216-033-00	METAL CHIP 220 5% 1/10W	
R226	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R227	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R228	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R231	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R232	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R401	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R402	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R403	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R404	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R405	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R406	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R407	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R408	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R409	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R410	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R411	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R412	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R413	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R414	1-216-089-00	METAL CHIP 47K 5% 1/10W	
		< SWITCH >	
S401	1-554-303-21	SWITCH, TACTILE (◀◀ ⏮)	
S402	1-554-303-21	SWITCH, TACTILE (⏭ ▶▶)	
S403	1-554-303-21	SWITCH, TACTILE (▷ ❚❚)	
S404	1-554-303-21	SWITCH, TACTILE (■)	
S405	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE ⏏)	
S406	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S407	1-554-303-21	SWITCH, TACTILE (CHECK)	
		< TRANSFORMER >	
⚠T101	1-450-341-11	TRANSFORMER, POWER	
		< VIBRATOR >	
X201	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
X301	1-567-908-11	VIBRATOR, CRYSTAL (16.9MHz)	
X401	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

****

Ref. No.	Part No.	Description	Remark
*	1-634-461-11	LOADING BOARD *************	
		< CONNECTOR >	
* CN291	1-564-498-11	PIN, CONNECTOR 5P	
		< SWITCH >	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
12	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
13	1-690-753-11	WIRE (FLAT TYPE) (22 CORE)	
⚠105	8-848-144-11	DEVICE, OPTICAL KSS-240A	
106	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-523-3	MOTOR ASSY, SPINDLE	
M102	X-4917-504-1	MOTOR ASSY, SLED	
M291	A-4608-362-A	MOTOR (L) ASSY	

****

****

HARDWARE LIST

****

Ref. No.	Part No.	Description	Remark
#1	7-682-547-09	SCREW +BVTT 3X6 (S)	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#6	7-621-775-10	SCREW +B 2.6X4	
#7	7-624-105-04	STOP RING 2.3, TYPE -E	
#8	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#9	7-621-255-15	SCREW +P 2X3	
#10	7-682-548-04	SCREW +BVTT 3X8 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

English
92F0420-1
Printed in Japan
© 1992. 6

9-957-262-31

Sony Corporation
Audio Group

Published by Customer Relations and Service Group

ST-H7700D

SERVICE MANUAL

AEP Model
UK Model

This set is the tuner
section in MHC-7700D/7710D.

- ST-H7700D is similar to the earlier ST-H6700 (AEP, UK model).
- Refer to ST-H6700 service manual for information not contained in this service manual.

PARTS LIST (The difference between ST-H6700 and ST-H7700D)

Page	ST-H6700				ST-H7700D		
	Ref. No.	Part No.	Description	Remarks	Part No.	Description	Remarks
23	1	4-932-844-11	CASE		4-950-163-01	CASE	
	3	X-4942-536-1	PANEL (H) ASSY, FRONT		X-4942-740-1	PANEL (N) ASSY, FRONT	
	*11	4-948-730-01	PANEL (EXP), BACK (AEP, UK)		*4-948-730-61	PANEL (EXP), BACK (AEP, UK)	
	*11	4-948-730-11	PANEL (EXP), BACK (IT)		*4-948-730-71	PANEL (EXP), BACK (IT)	
	*11	4-948-730-21	PANEL (EXP), BACK (G)		*4-948-730-51	PANEL (EXP), BACK (G)	
	12	4-950-911-11	PANEL (ST), FRONT		4-950-911-21	PANEL (ST), FRONT	
	16	4-942-636-01	EMBLEM (NO. 3.5), SONY		4-942-636-11	EMBLEM (NO. 3.5), SONY	

- G : Germany model
- IT : Italian model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

FM STEREO/FM-AM TUNER

SONY®

MICROFILM

9-957-267-11

Sony Corporation
Audio Group

English
92F0459-1
Printed in Japan

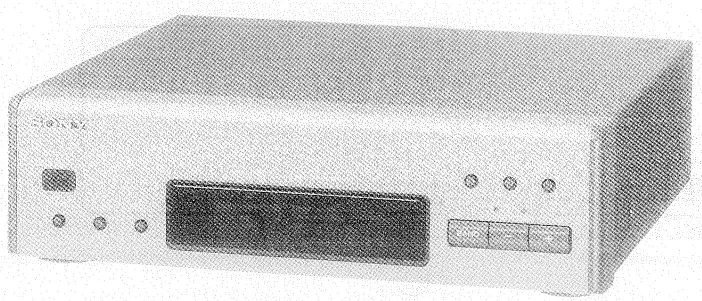
© 1992. 6

Published by Customer Relations and Service Group

ST-H6700

SERVICE MANUAL

AEP Model
UK Model



This set is the tuner
section in MHC-4700/6700

SPECIFICATIONS

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 — 108 MHz
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	AEP, UK, Germany model: MW: 531—1,602kHz LW: 153—279kHz Italian model: MW: 522—1,611kHz LW: 144—288kHz
Antenna	AM loop antenna, External antenna terminals
Intermediate frequency	450 kHz

Design and specifications subject to change without notice.

TABLE OF CONTENTS

Section *Title* *Page*

1. SERVICING NOTES
1-1. Supply of Power During Services 2
1-2. Service Mode to Check Timer ON-OFF 2
1-3. Service Mode to Check FL Tube and Key Input .. 3
1-4. How to Forcefully Turn Power ON 3

2. GENERAL 4
Parts Identification 4
Clock Setting 4
Tuning in Automatically 5
Tuning in Manually 5
Storing Stations 6
To Tune in a Preset Station 6

3. ELECTRICAL ADJUSTMENTS 7

4. DIAGRAMS
4-1. Block Diagram 9
4-2. Schematic Diagram —Tuner Section— 13
4-3. Printed Wiring Boards —Tuner Section— 15
4-4. Schematic Diagram —Display Section— 17
4-5. Printed Wiring Board —Display Section— 19
4-6. Pin Description 21
4-7. Semiconductor Lead Layouts 22

5. EXPLODED VIEW 23

6. ELECTRICAL PARTS LIST 24

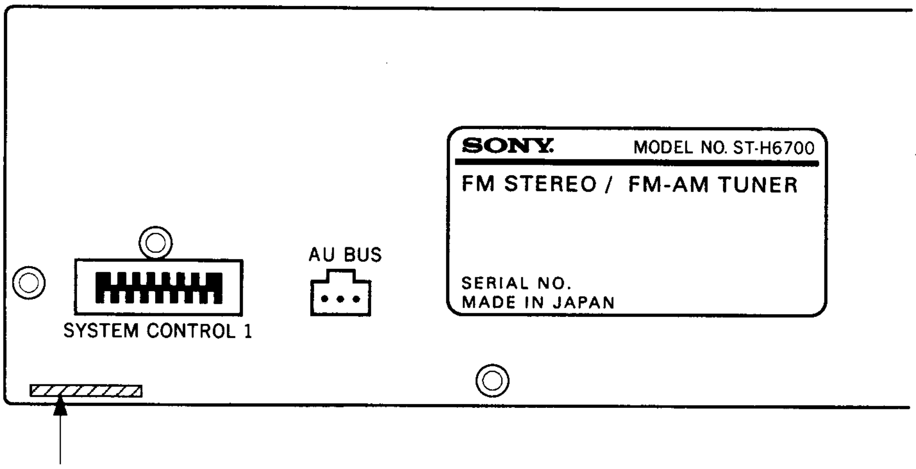
MICROFILM

FM STEREO/FM-AM TUNER

SONY®

MODEL IDENTIFICATION

—BACK PANEL—



4-948-730-01 (AE) : AEP, UK model
4-948-730-11 (IT) : Italian (IT) model
4-948-730-21 (AE4): Germany (G) model

SECTION 1
SERVICING NOTES

1-1. SUPPLY OF POWER DURING SERVICES

Because the equipment is not provided with any power supply, it is operated with power supplied from the amplifier TA-H4700/H6700 used in the series. The equipment requires the following 4 types of voltages. Therefore, connect the equipment to TA-H4700/H6700 for services such as repairing with power supplied, because it will be too complicated to supply these voltages individually.

VOLTAGE	MAJOR CIRCUIT IN USE
AC 3.9V	FL tube filament voltage (VF)
DC −24V	Display controller IC701 grid voltage (VG)
DC 5.6V	Display controller IC701, Tuner PLL IC81 Vcc
DC 12V	Tuner RF, FM/AM DET IC21 Vcc

1-2. SERVICE MODE TO CHECK TIMER ON-OFF

It is possible to check whether the timer normally functions while being connected with an amplifier.

(1) Connect the equipment to the amplifier TA-H4700/H6700 and set the SYSTEM POWER switch to STANDBY state.
(2) Set the time of the tuner to any time.
(3) Press 3 switches "BAND", "−" and "MEMORY/NEXT" at the same time (while pressing "BAND" and "−" beforehand, finally press "MEMORY/NEXT")
(4) FL display tube

10 : 21
↓ 0.5 sec
10 : 22
↓ 0.5 sec
10 : 23
↓ 0.5 sec
10 : 24
↓ 0.5 sec
FUNCTION : CD → POWER ON
↓ 3 sec
0 : 00 → POWER OFF

(5) Completion

Note : After completion of the checking above, data preset in the memory IC702 is erased while resetting the memory to the next page state upon shipping from the works, so be sure to recover the same frequency as that before the repairing.

• **Frequencies initially preset**

	AEP, UK, Germany model			Italian model		
	FM	MW	LW	FM	MW	LW
1	87.5MHz	531kHz	153kHz	87.5MHz	522kHz	144kHz
2	88.0MHz	603kHz	162kHz	88.0MHz	603kHz	162kHz
3	98.0MHz	999kHz	216kHz	98.0MHz	999kHz	216kHz
4	100.0MHz	1404kHz	270kHz	100.0MHz	1404kHz	270kHz
5	108.0MHz	1602kHz	279kHz	108.0MHz	1611kHz	288kHz
6—20	*1	*2	*2	*1	*2	*2

*1 The same frequency values are set for the preset memory No. 6—No. 10, No. 11—No. 15 and No. 16—No. 20 as for No. 1—No. 5 respectively.

*2 The same frequency values are set for the preset memory No. 6—No. 10 as for No. 1—No. 5.

1-3. SERVICE MODE TO CHECK FL TUBE AND KEY INPUT

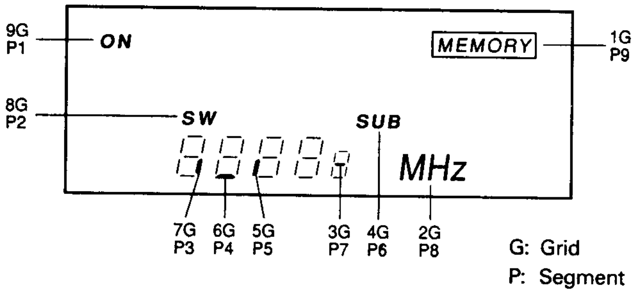
It is possible to check FL tube all ON grid, segment and key input.

(1) Connect the equipment to the amplifier TA-H4700/H6700 and remove the AC cord of the amplifier out of the AC receptacle.

(2) While pressing 3 switches "BAND", "−" and "MEMORY/NEXT" at the same time, insert the AC cord of the amplifier into the receptacle.

(3) Thus, all FL display tubes light up. By pressing "+" or "TIMER CONTROL" in this state, partial lighting or key input checking, respectively, is effected.

Partial lighting: Indicates the mode to check complete connection between the grid and segment of the FL tube. The condition is normal when the following indication is effected. By pressing "+" or "−" in the partial lighting mode, the status returns to key input checking or all ON in (3), respectively.



Key input checking: Shows the mode to check key input into 9 keys on the front panel. "0" is indicated at first, and every time a different key is pressed, indicated number is increased. After completion of pressing all 9 keys, "PASS" is indicated.
(Once a key is pressed, pressing it again is rejected.)

(4) After the completion of the checking, the equipment recovers normal operation by once removing the AC cord and inserting it again into the AC receptacle.

1-4. HOW TO FORCEFULLY TURN POWER ON

The equipment is not provided with any power switch. Therefore, power ON/OFF is controlled in the amplifier side. However, even without an amplifier, power is supplyable to the equipment according to the following methods provided any type of power is available, e.g. using a special jig or supplying the 4 types of voltages individually.
(When power is supplied from the amplifier, power is turned ON only for the tuner.)

(1) Supply power.

(2) Press 3 switches "STEREO/MONO", "−" and "MEMORY/NEXT" at the same time.
(Press "STEREO/MONO" and "−" beforehand, and finally press "MEMORY/NEXT".)

However, when the equipment is started up by the methods above, service modes TIMER ON/OFF and FL tube and key input checking are not operable.

SECTION 2
GENERAL

This section is extracted from instruction manual.

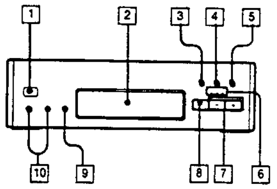
Parts Identification

Refer to the pages indicated in ● for use of the buttons.

Tuner Section A

- 1 Remote control sensor
- 2 Display window
- 3 MEMORY/NEXT button ㉖ (53) (63)
- 4 MODE button (54) (61)
- 5 STEREO/MONO (stereo/monaural) button (55)
- 6 TUNING/PRESET indicators
- 7 TUNING PRESET/TIMER –/+ buttons
- 8 BAND selector (54)
- 9 REC TIMER button ⑪
- 10 WAKE UP TIMER 1, 2 / CLOCK SET buttons ㉖

A



Clock Setting

Setting the Clock .

Example: Set to 9:25 in the morning.

1 **Press WAKE UP TIMER 1 and 2 at the same time.**

2 **Set the hour with the – or + buttons.**

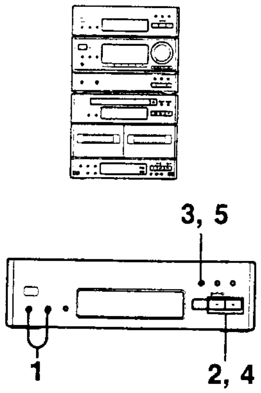
3 **Press MEMORY/NEXT.**

4 **Set the minute with the – or + buttons.**

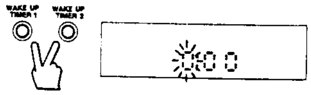
5 **Press MEMORY/NEXT.**
The clock starts operating.

Information on the time

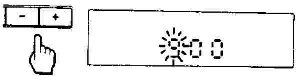
The European and U.K. model shows the time in 24-hour cycle.



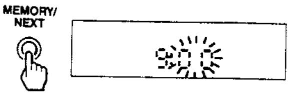
1



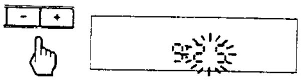
2



3



4



5

MEMORY/ NEXT

When a power interruption occurs
The clock, timer and Wake Up Volume settings are all erased, and "0:00" ("AM will flash on the display.

To change the frequency display to the time display
Press CLOCK DISP. on the remote commander. Press it again to change to the frequency display.

Radio

The automatic tuning allows you to receive stations whose signal is strong enough. When the signal is too weak, use the manual tuning.

Tuning in Automatically

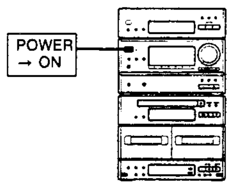
1 **Press BAND repeatedly until the desired band appears.**
As you press BAND, the band changes as follows:

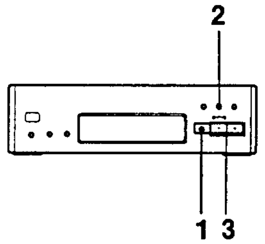
FM → MW → LW
↑___________|

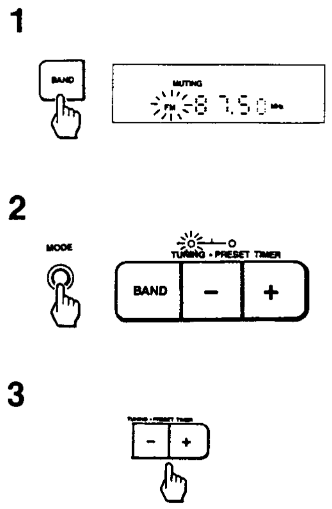
2 **Press MODE so that the TUNING indicator lights up.**

3 **Keep – or + depressed for more than 1 second.**
"AUTO" appears on the display and the unit tunes in a station automatically.

Repeat step 3 until the desired station appears.






1
BAND
MUTING
FM 87.50 MHz
2
MODE
TUNING · PRESET TIMER
BAND
–
+
3
–
+

Radio

Tuning in Manually

1 **Press BAND repeatedly until the desired band appears.**

2 **Press MODE so that the TUNING indicator lights up.**

3 **Press – or + repeatedly until the desired station appears.**

Indicator on the display

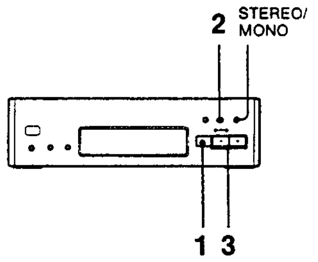
TUNED: Appears when a station with sufficient signal strength is tuned in.
STEREO: Appears when an FM stereo program with sufficient signal strength is received.

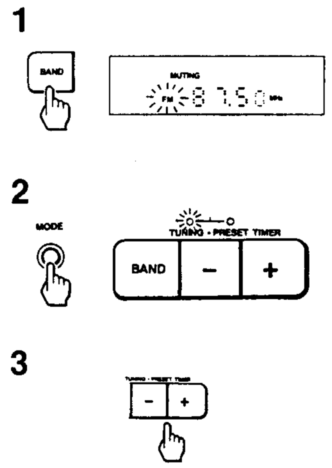
Antenna adjustment A

For MW and LW reception, find the best location for the supplied AM loop antenna.

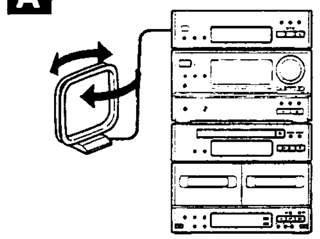
When an FM program is noisy or hard to receive

Press STEREO/MONO so that "MONO" appears in the display. There will be no stereo effect, but the reception will be improved. Press the button again to restore the stereo effect.


2 STEREO/
MONO
1 3


1
BAND
MUTING
FM 87.50 MHz
2
MODE
TUNING · PRESET TIMER
BAND
–
+
3
–
+

A



Radio

Storing Stations

You can store up to 20 FM stations, 10 MW stations and 10 LW stations in a desired sequence, so that you can tune in the stored station directly by entering the preset station number.
This operation is not possible with the remote commander.

1 **Tune in the desired station.**

2 **Press MEMORY/NEXT.**
"MEMORY" and the preset station numbers appear on the display.

3 **While "MEMORY" is on (for several seconds), press – or + to select a desired preset number.**

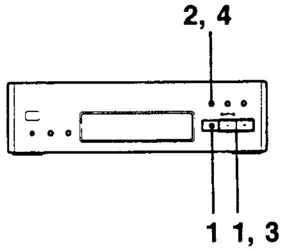
4 **Press MEMORY/NEXT.**
"MEMORY" disappears, and the station is stored.

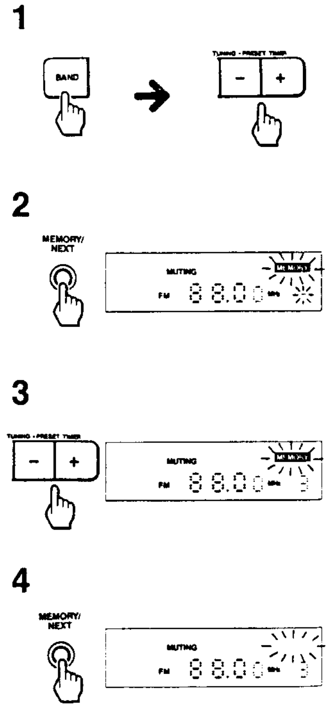
Repeat step 1 to 4 for each station to be stored.

If you cannot store a station successfully
Press MEMORY/NEXT again so that "MEMORY" appears, and then proceed with steps 3 and 4 above.
Be sure to operate while "MEMORY" is on (about 4 seconds).

When you have selected the wrong preset station number
Press MEMORY/NEXT again and then proceed with the steps 3 and 4.

To change the preset station
Store a desired station at the desired preset number by proceeding with the above steps.
The station previously preset will be erased.
Erasing only is not possible.




1
BAND
TUNING · PRESET TIMER
–
+
2
MEMORY/
NEXT
MUTING
FM 88.00 MHz
3
–
+
MUTING
FM 88.00 MHz
4
MEMORY/
NEXT
MUTING
FM 88.00 MHz

Radio

To Tune in a Preset Station

Notes
- When you use the remote commander for the following operations make sure that the display of the remote commander shows "TUNER". If not, press TUNER on the remote commander.
- You cannot operate the buttons on the lid if the lid is open.

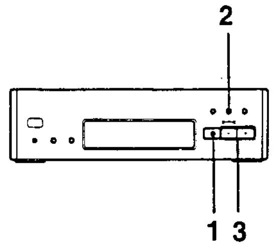
1 **Press BAND to select a desired band.**

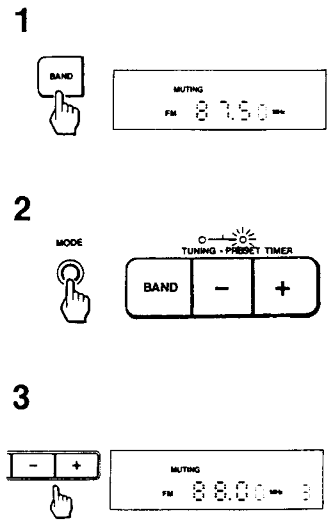
2 **Press MODE so that the PRESET indicator lights up.**

3 **Press – or + to select the desired preset station number.**

To tune in a preset station directly

Possible only with the remote commander.
1 Press BAND to select a desired band.
2 Press the numeric buttons to select the desired preset station number.




1
BAND
MUTING
FM 87.50 MHz
2
MODE
TUNING · PRESET TIMER
BAND
–
+
3
–
+
MUTING
FM 88.00 MHz

SECTION 3
ELECTRICAL ADJUSTMENTS

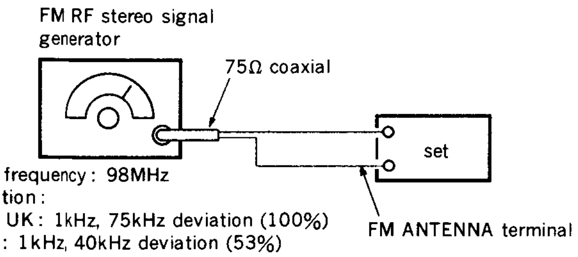
Precautions in Repairing

If the front end unit fails, it is difficult to repair the inner circuits, so replace the entire front end unit.

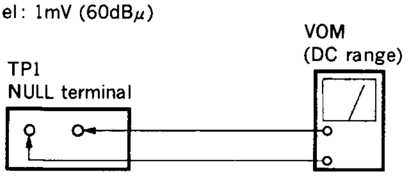
FM SECTION

FM Discriminator Adjustment (NULL Adjustment)

Setting :


FM RF stereo signal generator
75Ω coaxial
set
FM ANTENNA terminal

Carrier frequency : 98MHz
Modulation :
AEP, UK : 1kHz, 75kHz deviation (100%)
G, IT : 1kHz, 40kHz deviation (53%)
Output level : 1mV (60dBμ)


VOM
(DC range)
TP1
NULL terminal

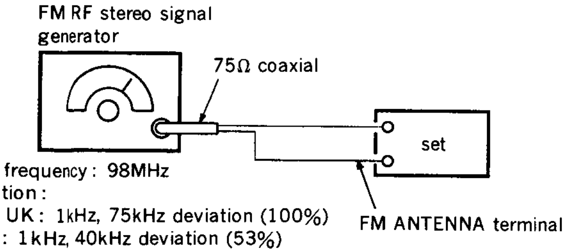
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator alignment.

FM Tuning Level Adjustment

Setting :


FM RF stereo signal generator
75Ω coaxial
set
FM ANTENNA terminal

Carrier frequency : 98MHz
Modulation :
AEP, UK : 1kHz, 75kHz deviation (100%)
G, IT : 1kHz, 40kHz deviation (53%)
Output level : 0.018mV (25dBμ)

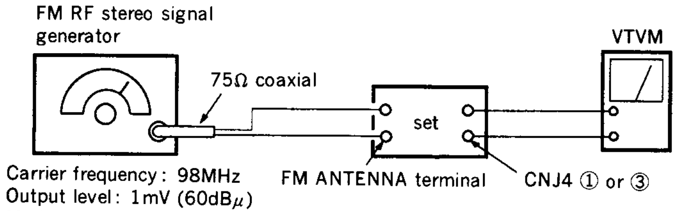
Procedure :

1. Tune the set to 98MHz.
2. Adjust T24 so that the TUNED indicator goes on.

- G : Germany model
- IT : Italian model

FM Stereo Separation Adjustment

Setting :


FM RF stereo signal generator
75Ω coaxial
set
VTVM
FM ANTENNA terminal
CNJ4 ① or ③

Carrier frequency : 98MHz
Output level : 1mV (60dBμ)
Modulation : L+R 33.75kHz deviation
L−R 33.75kHz deviation
Pilot Signal 19kHz 7.5kHz deviation

Procedure :

Tune the set to 98MHz.

FM stereo Signal generator Output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

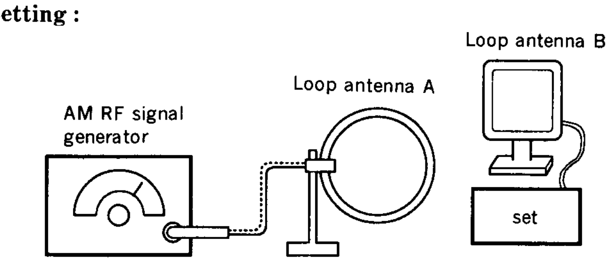
L-CH Stereo separation : Ⓐ—Ⓑ
R-CH Stereo separation : Ⓒ—Ⓓ

The separations of both channels should be equal.

AM SECTION

AM Tuning Level Adjustment

Setting :

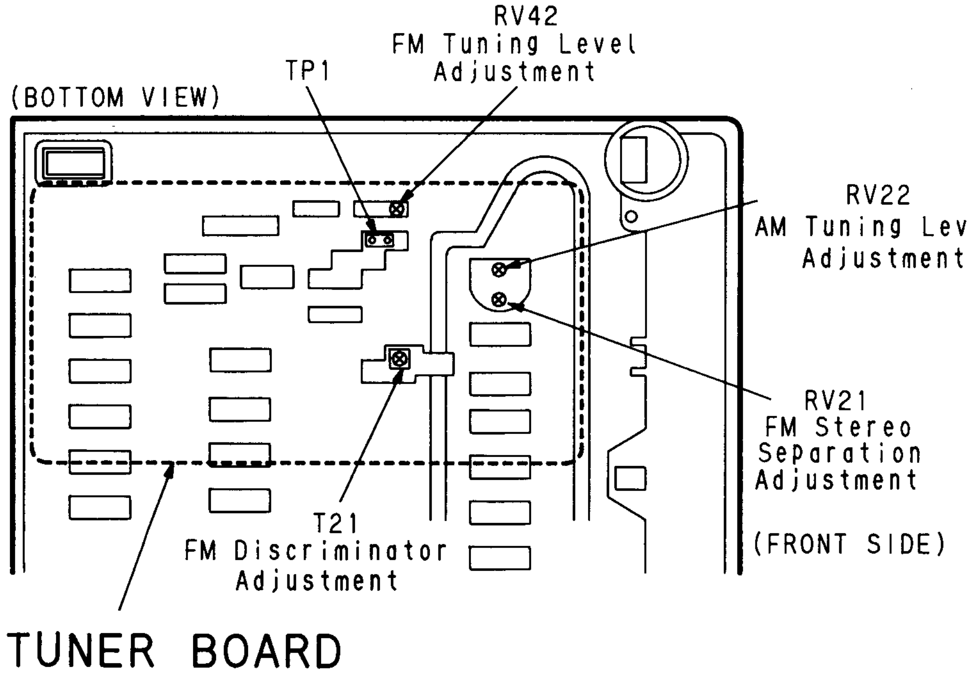

Loop antenna B
Loop antenna A
AM RF signal generator
set

Carrier frequency : 999kHz
30% amplitude
modulation by 400Hz signal

Procedure :

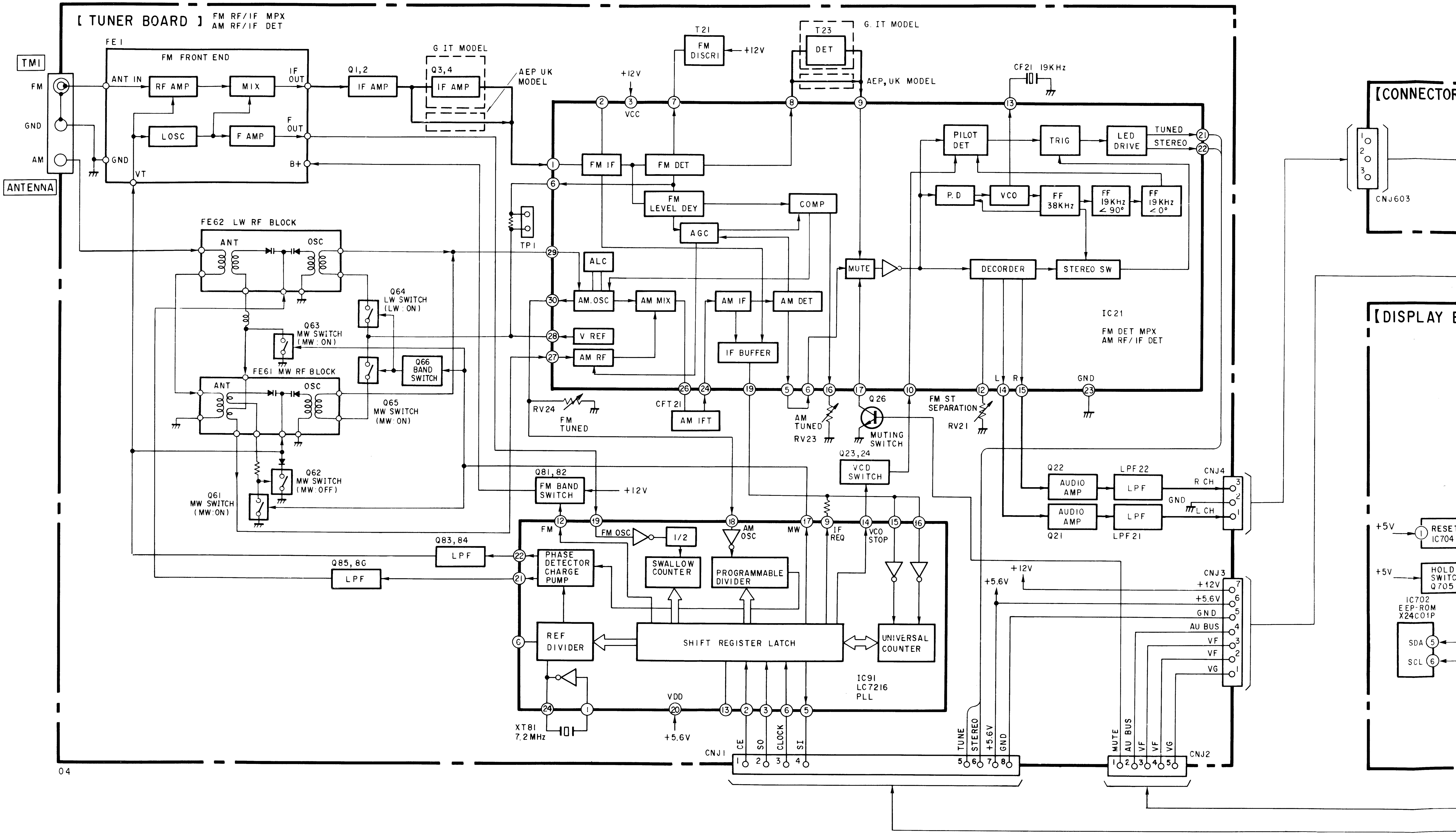
1. Set loop antenna A so that the loop antenna B input level becomes 58dBμ/m (0.8mV/m)
2. Tune the set to 999kHz.
3. Adjust the RV22 so that the TUNED indicator goes on.

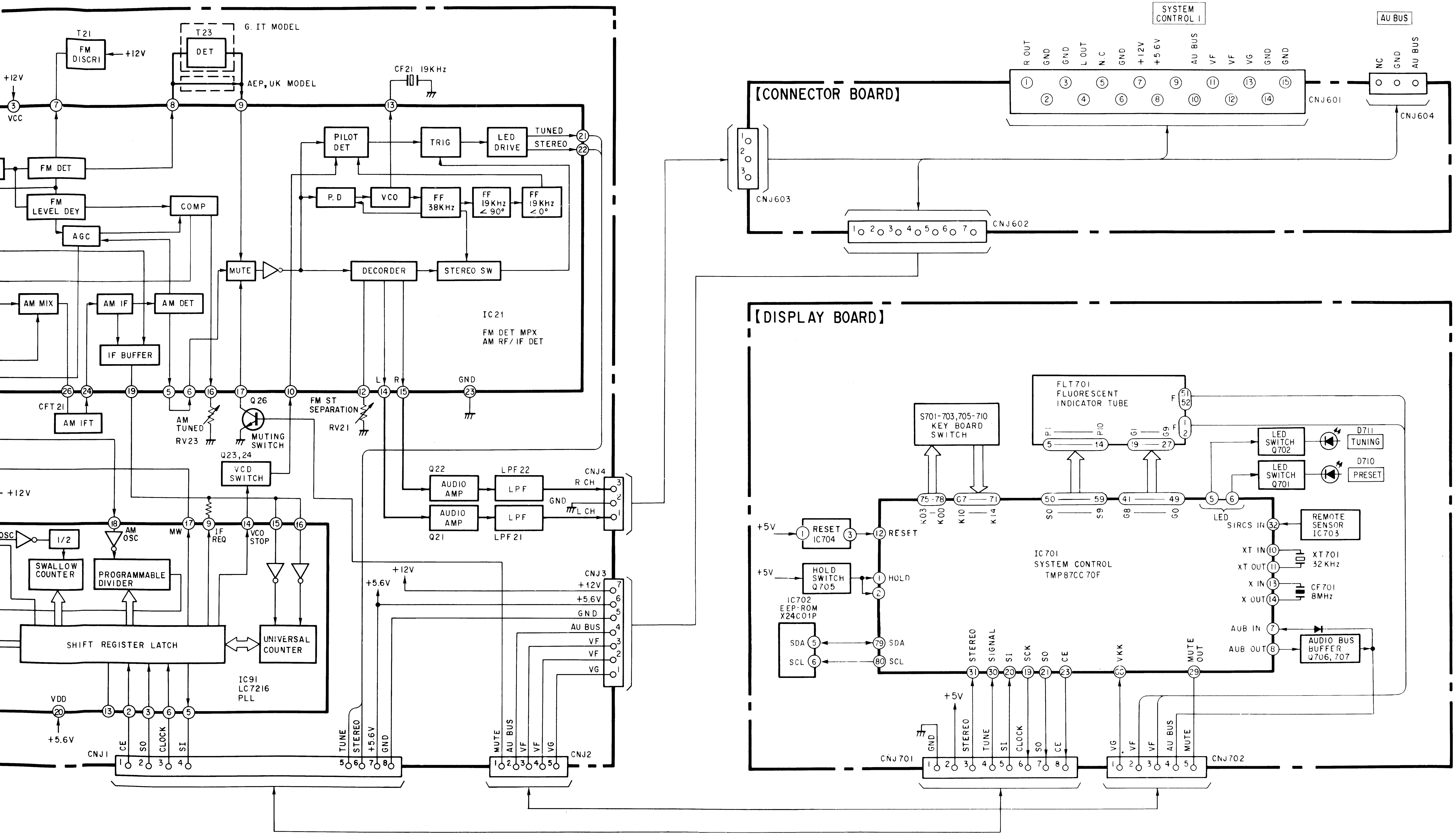
Adjustment Location :


RV42
FM Tuning Level
Adjustment
TP1
(BOTTOM VIEW)
RV22
AM Tuning Level
Adjustment
RV21
FM Stereo
Separation
Adjustment
(FRONT SIDE)
T21
FM Discriminator
Adjustment
TUNER BOARD

SECTION 4
DIAGRAMS

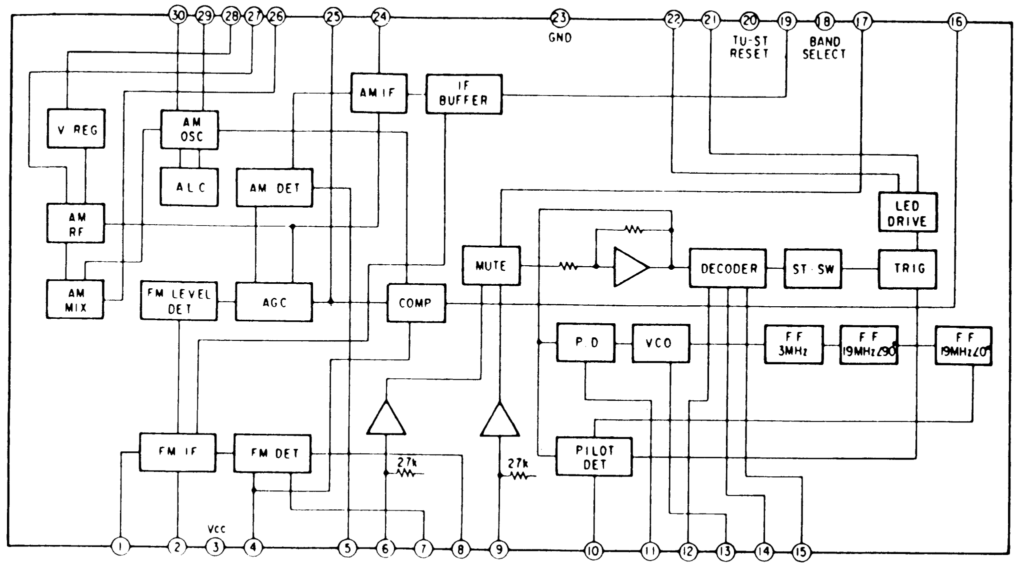
4-1. BLOCK DIAGRAM


[TUNER BOARD]
FM RF/IF MPX
AM RF/IF DET
TM1
FM
GND
AM
ANTENNA
FE1
FM FRONT END
ANT IN
RF AMP
MIX
IF OUT
LOSC
F AMP
F OUT
B+
GND
VT
Q1,2
IF AMP
G IT MODEL
Q3,4
IF AMP
AEP UK MODEL
T21
FM DISCRI
+12V
T23
DET
G. IT MODEL
AEP, UK MODEL
VCC
CF21 19KHz
FM IF
FM DET
FM LEVEL DEY
COMP
AGC
TP1
ALC
AM.OSC
AM MIX
AM IF
AM DET
V REF
AM RF
IF BUFFER
MUTE
PILOT DET
TRIG
LED DRIVE
TUNED
STEREO
P.D
VCO
FF 38KHz
FF 19KHz ∠90°
FF 19KHz ∠0°
DECORDER
STEREO SW
IC21
FM DET MPX
AM RF/IF DET
GND
L
R
FE62 LW RF BLOCK
ANT
OSC
Q64 LW SWITCH (LW:ON)
Q63 MW SWITCH (MW:ON)
Q66 BAND SWITCH
FE61 MW RF BLOCK
Q65 MW SWITCH (MW:ON)
Q62 MW SWITCH (MW:OFF)
Q61 MW SWITCH (MW:ON)
RV24
FM TUNED
CFT21
AM IFT
AM TUNED
RV23
Q26
MUTING SWITCH
FM ST SEPARATION
RV21
Q23,24
VCD SWITCH
Q81,82
FM BAND SWITCH
Q83,84
LPF
Q85,86
LPF
FM
FM OSC
1/2
AM OSC
MW
IF REQ
VCO STOP
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER
PROGRAMMABLE DIVIDER
REF DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
IC91
LC7216
PLL
XT81
7.2MHz
VDD
+5.6V
CE
SO
CLOCK
SI
CNJ1
TUNE
STEREO
+5.6V
GND
Q22
AUDIO AMP
LPF22
LPF
Q21
AUDIO AMP
LPF21
LPF
CNJ4
R CH
GND
L CH
CNJ3
+12V
+5.6V
GND
AU BUS
VF
VF
VG
MUTE
AU BUS
VF
VF
VG
CNJ2
[CONNECTOR
CNJ603
[DISPLAY
+5V
RESET
IC704
HOLD SWITC
Q705
IC702
EEP-ROM
X24C01P
SDA
SCL
04

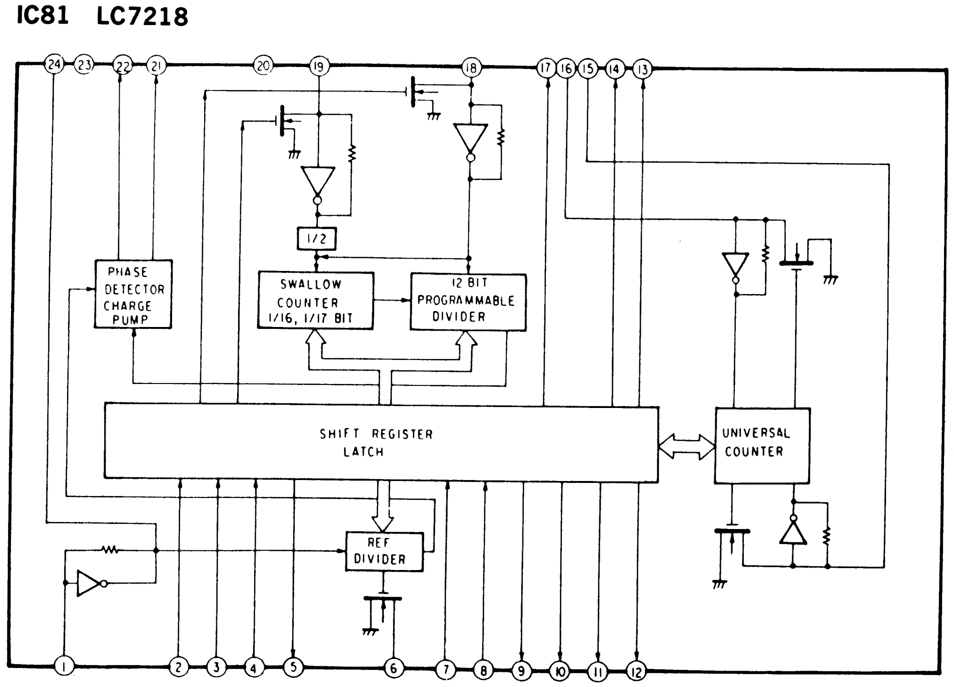

T21
FM DISCRI
+12V
T23
DET
G. IT MODEL
AEP, UK MODEL
CF21 19KHz
VCC
FM DET
FM LEVEL DEY
AGC
COMP
PILOT DET
TRIG
LED DRIVE
TUNED
STEREO
P.D
VCO
FF 38KHz
FF 19KHz ∠90°
FF 19KHz ∠0°
MUTE
DECORDER
STEREO SW
AM MIX
AM IF
AM DET
IF BUFFER
IC21
FM DET MPX
AM RF/IF DET
L
R
GND
CFT21
AM IFT
AM TUNED
RV23
Q26
MUTING SWITCH
FM ST SEPARATION
RV21
Q23,24
VCD SWITCH
Q22
AUDIO AMP
LPF22
LPF
Q21
LPF21
CNJ4
R CH
L CH
AM OSC
1/2
SWALLOW COUNTER
PROGRAMMABLE DIVIDER
MW
IF REQ
VCO STOP
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
IC91
LC7216
PLL
VDD
+5.6V
CNJ1
CE
SO
CLOCK
SI
TUNE
STEREO
+5.6V
GND
+12V
CNJ3
+12V
+5.6V
GND
AU BUS
VF
VF
VG
MUTE
AU BUS
VF
VF
VG
CNJ2
SYSTEM CONTROL I
AU BUS
R OUT
GND
GND
L OUT
N.C
GND
+12V
+5.6V
AU BUS
VF
VF
VG
GND
GND
NC
GND
AU BUS
【CONNECTOR BOARD】
CNJ601
CNJ604
CNJ603
CNJ602
【DISPLAY BOARD】
FLT701
FLUORESCENT INDICATOR TUBE
S701-703,705-710
KEY BOARD SWITCH
LED SWITCH Q702
D711
TUNING
LED SWITCH Q701
D710
PRESET
K03 — K00
K10 — K14
S0 — S9
G8 — G0
LED
+5V
RESET IC704
RESET
+5V
HOLD SWITCH Q705
HOLD
IC702
EEP-ROM
X24C01P
SDA
SCL
IC701
SYSTEM CONTROL
TMP87CC70F
SIRCS IN
REMOTE SENSOR IC703
XT IN
XT OUT
XT701
32KHz
X IN
X OUT
CF701
8MHz
AUB IN
AUB OUT
AUDIO BUS BUFFER Q706, 707
STEREO
SIGNAL
SI
SCK
SO
CE
VKK
MUTE OUT
+5V
CNJ701
GND
STEREO
TUNE
SI
CLOCK
SO
CE
VG
VF
VF
AU BUS
MUTE
CNJ702

- **IC Block Diagrams**

IC21 LA1851N


GND
TU-ST RESET
BAND SELECT
V REG
AM OSC
ALC
AM DET
AM IF
IF BUFFER
AM RF
AM MIX
FM LEVEL DET
AGC
COMP
MUTE
DECODER
ST SW
TRIG
LED DRIVE
P D
VCO
FF 3MHz
FF 19MHz/90°
FF 19MHz/0°
FM IF
FM DET
PILOT DET
27k
27k
VCC

IC81 LC7218


PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER

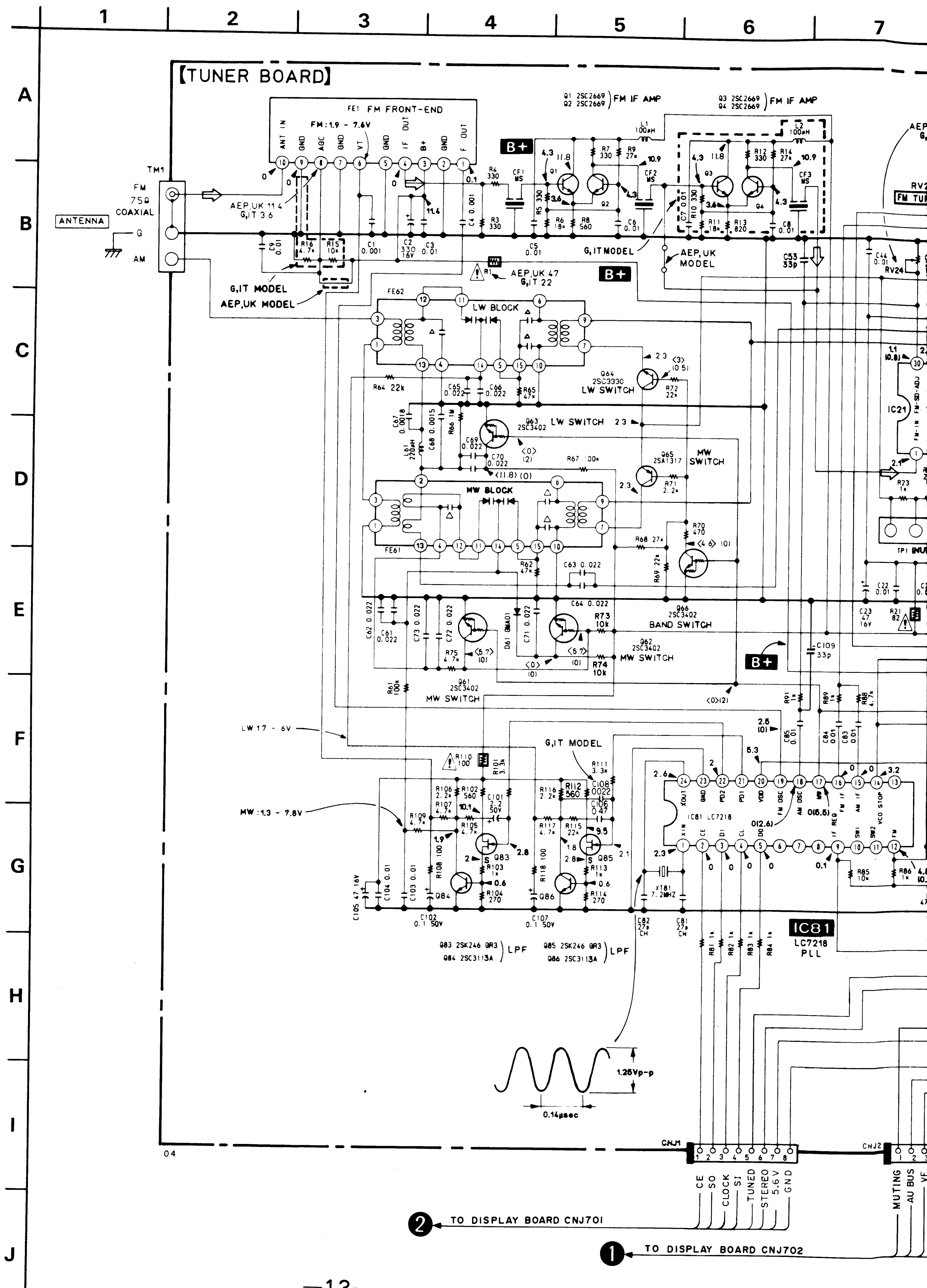
Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  (   ) : MW
  <   > : LW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
- G : Germany model
- IT : Italian model

4-2. SCHEMATIC DIAGRAM —TUNER SECTION—


TUNER BOARD
FE1 FM FRONT-END
FM:1.9 - 7.6V
ANT IN
GND
AGC
VT
IF OUT
B+
TM1
FM 75Ω COAXIAL
ANTENNA
G
AM
AEP,UK 11.4
G,IT 3.6
G,IT MODEL
AEP,UK MODEL
Q1 2SC2669
Q2 2SC2669
FM IF AMP
Q3 2SC2669
Q4 2SC2669
FM IF AMP
CF1
CF2
CF3
G,IT MODEL
AEP,UK MODEL
AEP,UK 47
G,IT 22
FE62
LW BLOCK
Q64 2SC3330 LW SWITCH
Q63 2SC3402 LW SWITCH
Q65 2SA1317 MW SWITCH
MW BLOCK
FE61
Q66 2SC3402 BAND SWITCH
Q62 2SC3402 MW SWITCH
Q61 2SC3402 MW SWITCH
LW 1.7 - 6V
MW: 1.3 - 7.8V
G,IT MODEL
Q83 2SK246 GR3
Q84 2SC3113A
LPF
Q85 2SK246 GR3
Q86 2SC3113A
LPF
IC81 LC7218
IC81 LC7218 PLL
X181 7.2MHz
1.25Vp-p
0.14μsec
IC21
RV24
CNJ1
CE
SO
CLOCK
SI
TUNED
STEREO
5.6V
GND
CNJ2
MUTING
AU BUS
TO DISPLAY BOARD CNJ701
TO DISPLAY BOARD CNJ702
1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J

4-2. SCHEMATIC DIAGRAM —TUNER SECTION—

unless otherwise noted. pF: $\mu\mu$F
indicated except for electrolytics

and $^1/_4$W or less unless otherwise

nent.

esistor.

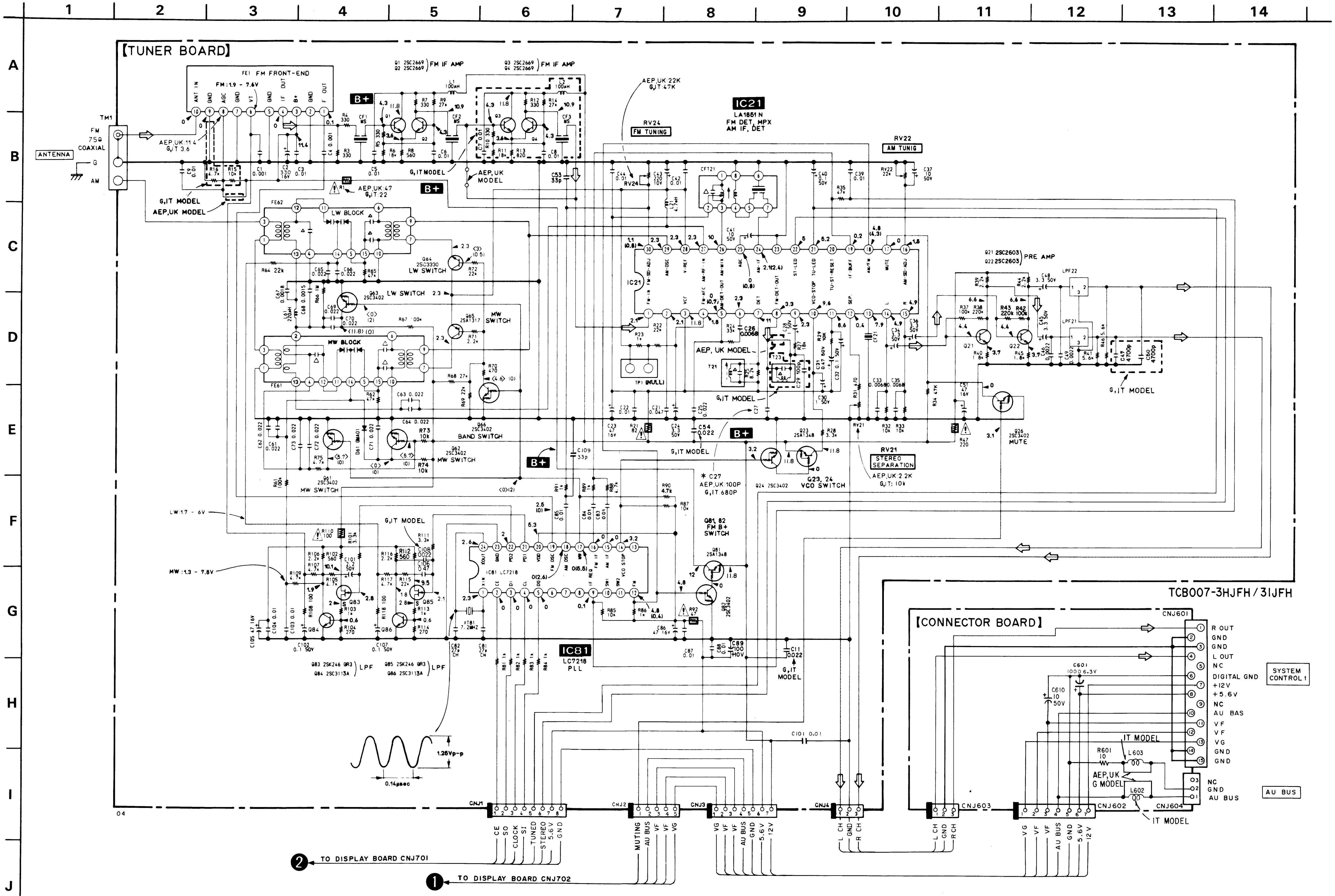
dentified by mark ⚠ or dotted
are critical for safety.
part number specified.

epair.

s are dc with respect to ground
l) conditions.

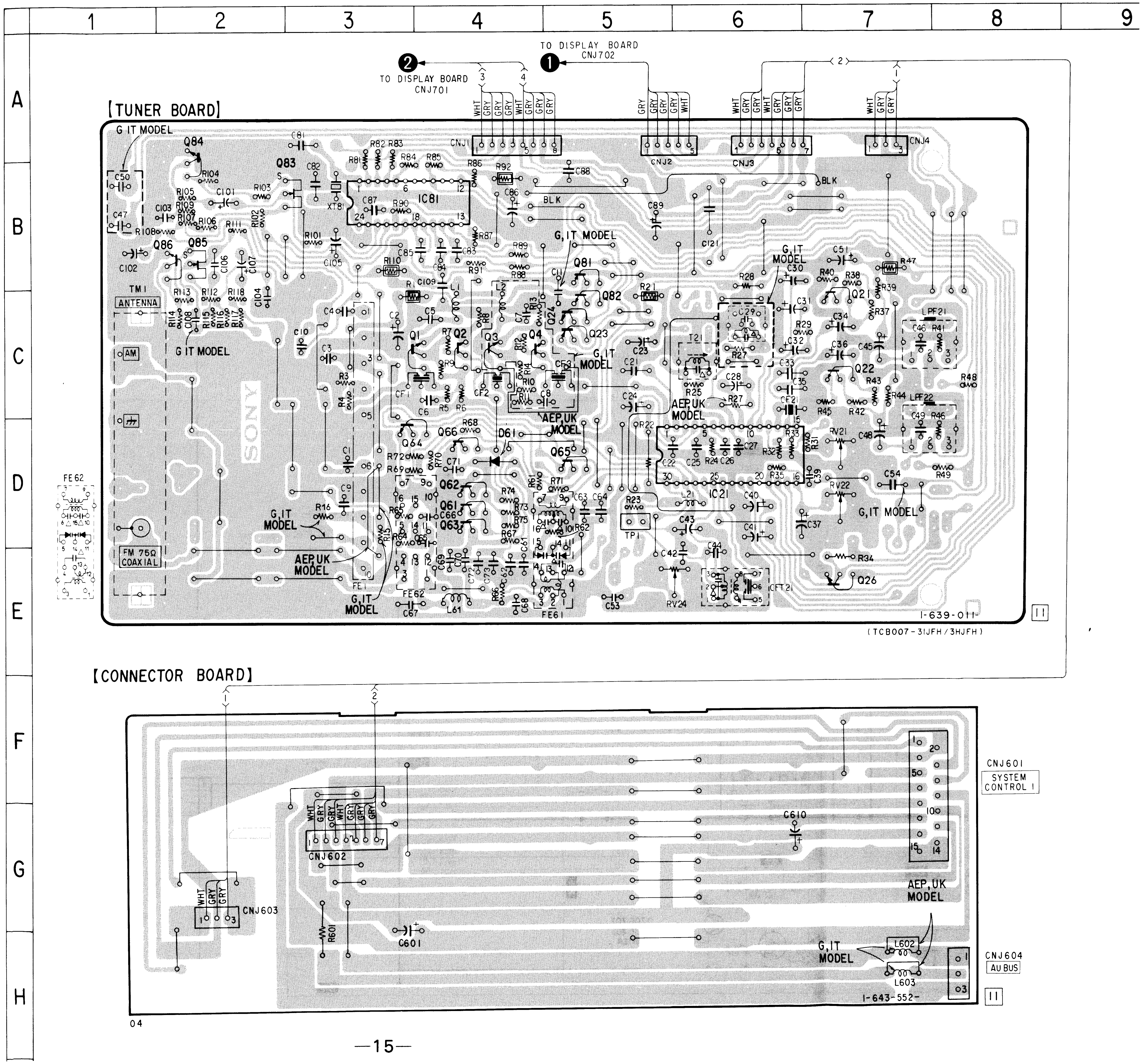
a VOM (Input Impedance 10MΩ).
be noted due to normal produc-

h a oscilloscope.
be noted due to normal produc-


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
【TUNER BOARD】
FE1 FM FRONT-END
FM: 1.9 - 7.6V
ANT IN
GND
AGC
VT
IF
B+
F OUT
TM1
FM 75Ω COAXIAL
ANTENNA
AM
AEP,UK 11.4
G,IT 3.6
G,IT MODEL
AEP,UK MODEL
Q1 2SC2669
Q2 2SC2669
FM IF AMP
Q3 2SC2669
Q4 2SC2669
FM IF AMP
B+
G,IT MODEL
AEP,UK MODEL
AEP,UK 47
G,IT 22
AEP,UK 22K
G,IT 47K
RV24
FM TUNING
IC21
LA1851N
FM DET, MPX
AM IF, DET
RV22
AM TUNIG
FE62
LW BLOCK
Q64 2SC3330
LW SWITCH
Q63 2SC3402
LW SWITCH
Q65 2SA1317
MW SWITCH
MW BLOCK
FE61
Q66 2SC3402
BAND SWITCH
Q62 2SC3402
MW SWITCH
Q61 2SC3402
MW SWITCH
LW:1.7 - 6V
MW:1.3 - 7.8V
TP1 (NULL)
AEP, UK MODEL
G,IT MODEL
Q21 2SC2603
Q22 2SC2603
PRE AMP
LPF22
LPF21
G,IT MODEL
Q26 2SC3402
MUTE
RV21
STEREO SEPARATION
AEP,UK 2.2K
G,IT: 10k
Q23, 24
VCO SWITCH
Q23 2SA1348
Q24 2SC3402
✱ C27
AEP,UK 100P
G,IT 680P
Q81, 82
FM B+ SWITCH
Q81 2SA1348
Q82 2SC3402
G,IT MODEL
IC81 LC7218
IC81
LC7218
PLL
X781 7.2MHz
Q83 2SK246 GR3
Q84 2SC3113A
LPF
Q85 2SK246 GR3
Q86 2SC3113A
LPF
1.25Vp-p
0.14μsec
G,IT MODEL
TCB007-3HJFH/31JFH
【CONNECTOR BOARD】
CNJ601
R OUT
GND
GND
L OUT
NC
DIGITAL GND
+12V
+5.6V
NC
AU BAS
VF
VF
VG
GND
GND
SYSTEM CONTROL 1
C601 1000 6.3V
C610 10 50V
IT MODEL
R601 10
L603
AEP,UK
G MODEL
L602
NC
GND
AU BUS
AU BUS
IT MODEL
CNJ1
CNJ2
CNJ3
CNJ4
CNJ603
CNJ602
CNJ604
CE
SO
CLOCK
SI
TUNED
STEREO
5.6V
GND
MUTING
AU BUS
VF
VG
VG
VF
VF
AU BUS
GND
5.6V
12V
L CH
GND
R CH
L CH
GND
R CH
VG
VF
VF
AU BUS
GND
5.6V
12V
❷ TO DISPLAY BOARD CNJ701
❶ TO DISPLAY BOARD CNJ702

4-3. PRINTED WIRING BOARDS —TUNER SECTION—

- Refer to page 22 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
TO DISPLAY BOARD CNJ702
TO DISPLAY BOARD CNJ701
[TUNER BOARD]
G IT MODEL
CNJ1
CNJ2
CNJ3
CNJ4
WHT
GRY
BLK
IC81
IC21
XT81
G, IT MODEL
AEP, UK MODEL
TM1
ANTENNA
AM
FM 75Ω COAXIAL
FE61
FE62
LPF21
LPF22
CF1
CF2
CF3
CFT21
T21
TP1
RV21
RV22
RV24
SONY
1-639-011-
(TCB007-31JFH/3HJFH)
[CONNECTOR BOARD]
CNJ601
SYSTEM CONTROL 1
CNJ602
CNJ603
CNJ604
AU BUS
C601
C610
R601
L602
L603
AEP, UK MODEL
G, IT MODEL
1-643-552-
04

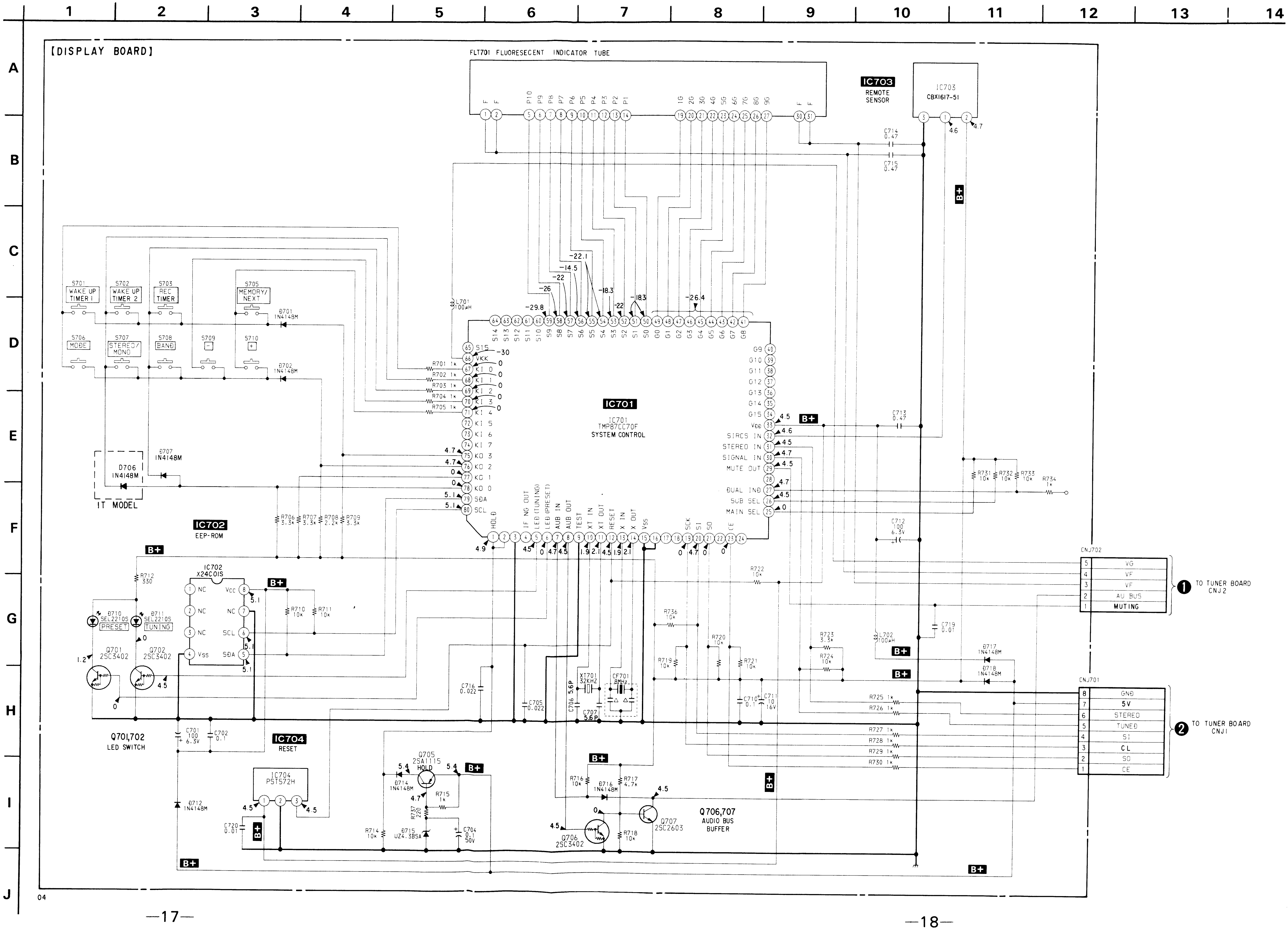
• Semiconductor Location

Ref. No.	Location
D61	D-4
IC21	D-6
IC81	B-4
Q1	C-4
Q2	C-4
Q3	C-4
Q4	C-4
Q21	C-7
Q22	C-7
Q23	C-5
Q24	C-5
Q26	E-7
Q61	D-4
Q62	D-4
Q63	D-4
Q64	D-3
Q65	D-5
Q66	D-4
Q81	B-5
Q82	C-5
Q83	B-3
Q84	A-2
Q85	B-2
Q86	B-2

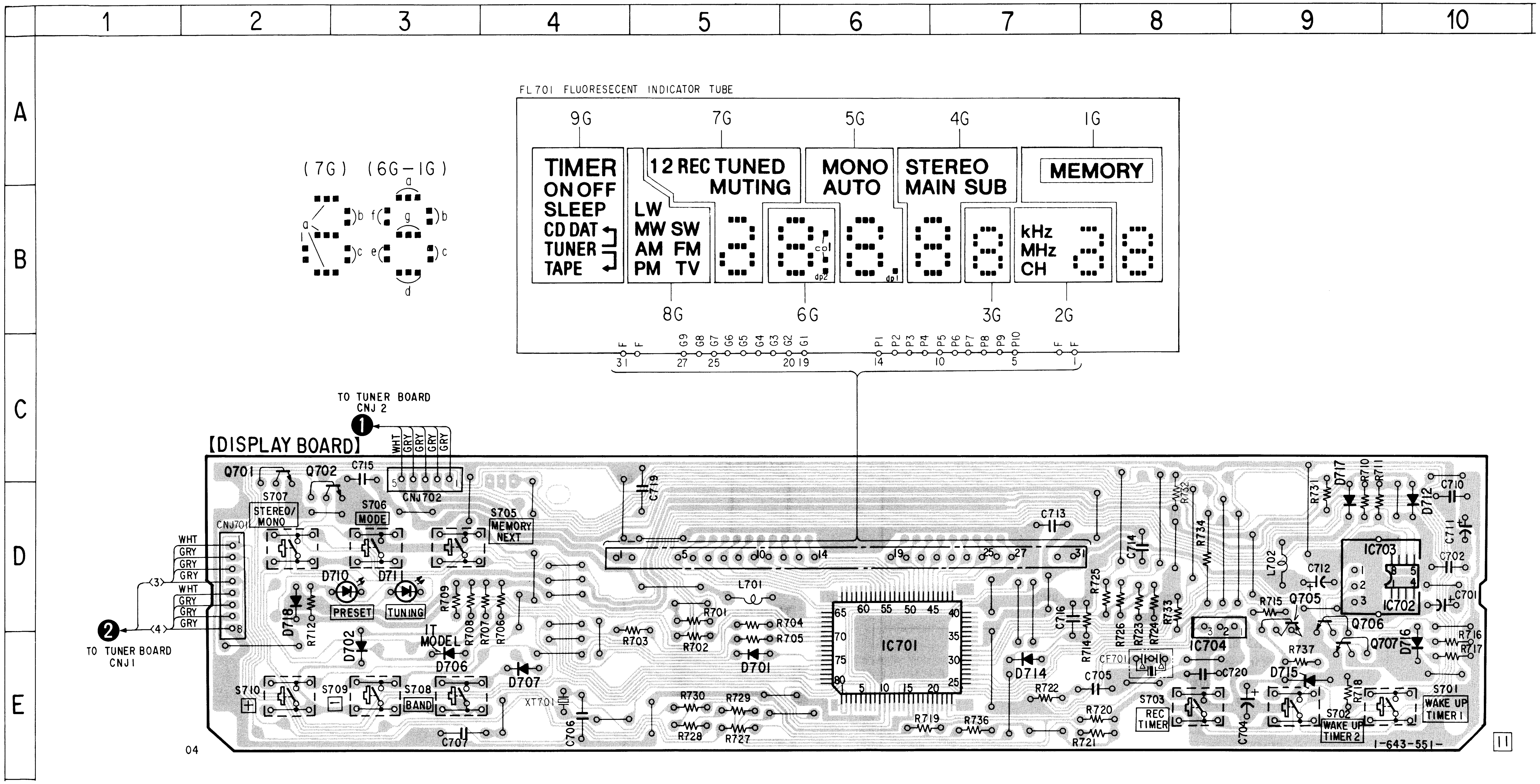
Note:

- ○—— : parts extracted from the component side.
- G : Germany model
- IT: Italian model

4-4. SCHEMATIC DIAGRAM —DISPLAY SECTION—


[DISPLAY BOARD]
FLT701 FLUORESECENT INDICATOR TUBE
IC703
REMOTE SENSOR
IC703 CBX1617-51
IC701
IC701 TMP87CC70F SYSTEM CONTROL
IC702
EEP-ROM
IC702 X24C01S
IC704
RESET
IC704 PST572H
S701 WAKE UP TIMER 1
S702 WAKE UP TIMER 2
S703 REC TIMER
S705 MEMORY/NEXT
S706 MODE
S707 STEREO/MONO
S708 BAND
S709 −
S710 +
D706 1N4148M
1T MODEL
D701 1N4148M
D702 1N4148M
D707 1N4148M
D710 SEL2210S PRESET
D711 SEL2210S TUNING
Q701 2SC3402
Q702 2SC3402
Q701,702 LED SWITCH
Q705 2SA1115 HOLD
D714 1N4148M
D715 UZ4.3BSA
D712 1N4148M
D716 1N4148M
D717 1N4148M
D718 1N4148M
Q706 2SC3402
Q707 2SC2603
Q706,707 AUDIO BUS BUFFER
XT701 32KHZ
CF701 8MHz
L701 100μH
L702 100μH
CNJ702
VG
VF
VF
AU BUS
MUTING
TO TUNER BOARD CNJ2
CNJ701
GND
5V
STEREO
TUNED
SI
CL
SO
CE
TO TUNER BOARD CNJ1
B+
SIRCS IN
STEREO IN
SIGNAL IN
MUTE OUT
DUAL IND
SUB SEL
MAIN SEL
HOLD
IF NG OUT
LED (TUNING)
LED (PRESET)
AUB IN
AUB OUT
TEST
XT IN
XT OUT
RESET
X IN
X OUT
VSS
SCK
SI
SO
CE
VDD
SDA
SCL
VKK
KI 0
KI 1
KI 2
KI 3
KI 4
KI 5
KI 6
KI 7
KO 3
KO 2
KO 1
KO 0
04

4-5. PRINTED WIRING BOARD —DISPLAY SECTION— • Refer to page 22 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
FL701 FLUORESCENT INDICATOR TUBE
9G
7G
5G
4G
1G
8G
6G
3G
2G
(7G) (6G−1G)
a
b
c
d
e
f
g
TIMER
ON OFF
SLEEP
CD DAT
TUNER
TAPE
12 REC TUNED
MUTING
MONO
AUTO
STEREO
MAIN SUB
MEMORY
LW
MW SW
AM FM
PM TV
kHz
MHz
CH
col
dp2
dp1
F F G9 G8 G7 G6 G5 G4 G3 G2 G1 P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 F F
31 27 25 20 19 14 10 5 1
TO TUNER BOARD CNJ 2
❶
[DISPLAY BOARD]
WHT GRY GRY GRY GRY
TO TUNER BOARD CNJ1
❷
WHT GRY GRY GRY WHT GRY GRY GRY
CNJ701
CNJ702
Q701
Q702
C715
S707 STEREO/MONO
S706 MODE
S705 MEMORY NEXT
D710 PRESET
D711 TUNING
D718
R712
D702
IT MODEL
D706
D707
R709 R708 R707 R706
S710 ⊞
S709 ⊟
S708 BAND
XT701
C706
C707
C719
L701
R701 R702 R703 R704 R705
D701
R730 R729 R728 R727
IC701
C713
C714
C716
R714
R725 R726 R723 R724 R733
R734
R732
R731
D717
R710 R711
D712
C710
C711
C702
C701
IC703
IC702
L702
C712
R715 Q705
Q706
Q707
IC704
R737
D715
D716
R716 R717
R718
CF701
C705
C720
D714
R722
R719 R736
R720 R721
S703 REC TIMER
C704
S702 WAKE UP TIMER 2
S701 WAKE UP TIMER 1
1-643-551-
11
04

• Semiconductor Location

Ref. No.	Location
D701	E-5
D702	E-3
D706	E-3
D707	E-4
D710	D-3
D711	D-3
D712	D-10
D714	E-7
D715	E-9
D716	E-10
D717	D-9
D718	D-2
IC701	E-6
IC702	D-10
IC703	D-9
IC704	E-8
Q701	C-2
Q702	C-2
Q705	D-9
Q706	D-9
Q707	E-9

Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- IT: Italian model

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- IT: Italian model

4-6. PIN DESCRIPTION

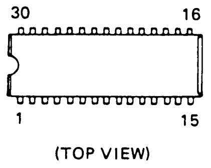
• IC701 System Controller (TMP87CC70F-6021)

The terminals work to control tuner section (IC21, 81), FL tube display and reading and writing of IC702 (preset data), etc. according to key input and signal from the remote controller.

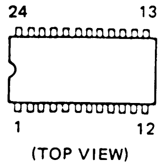
PIN No.	PIN NAME	I/O	ACTIVE	PIN FUNCTION
1	HOLD	I	↓	HOLD detecting interrupt terminal
2	HOLD RESET	I	↑	HOLD resetting interrupt terminal
3		I		Not in use
4	IF NGOUT	O	H	IF count NG output
5	LED1	O	H	TUNING LED ON
6	LED2	O	H	PRESET LED ON
7	AUB IN	I	L	AUDIO BUS input
8	AUB OUT	O	L	AUDIO BUS output
9	TEST	I	H	Test terminal
10	XT IN	I		Low frequency oscillator connection terminal (32KHz)
11	XT OUT	O		Low frequency oscillator connection terminal (32KHz)
12	RESET	I	L	Reset signal input
13	X IN	I		High frequency oscillator connection terminal (8MHz)
14	X OUT	O		High frequency oscillator connection terminal (8MHz)
15	VSS			GND
16		I		Not in use
17, 18		O		Not in use
19	SCK	O		PLL serial clock output
20	SI	I		PLL serial data input
21	SO	O		PLL serial data output
22				Not in use
23	CE	O	H	PLL chip enable
24				Not in use
25	MAIN SEL	O	L	Main sound selection terminal (Not in use)
26	SUB SEL	O	L	Sub sound selection terminal (Not in use)
27	DUAL IND	I	L	Sound dual signal detection terminal (Not in use)
28				Not in use
29	MUTE OUT	O	L	MUTING output
30	SIGNAL IN	I	L	TUNED input
31	STEREO IN	I	L	STEREO input
32	SIRCS IN	I	L	SIRCS input
33	VDD			+5V
34 - 40		O		Not in use
41 - 49	G0 - G8	O	H	FL tube digit output
50 - 59	S0 - S9	O	H	FL tube segment output
60 - 65		O	H	Not in use
66	VKK			FL tube driving power supply
67 - 71	KI0 - KI4	I	H	Key input
72		I		Not in use
73, 74				Not in use
75 - 78	KO0 - KO3	O	H	Key output
79	SDA	I/O		Data input/output for EEPROM
80	SCL	O		Clock output for EEPROM

4-7. SEMICONDUCTOR LEAD LAYOUTS

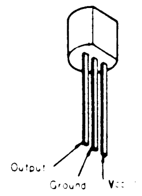
LA1851N


30
16
1
15
(TOP VIEW)

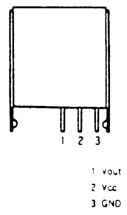
LC7218


24
13
1
12
(TOP VIEW)

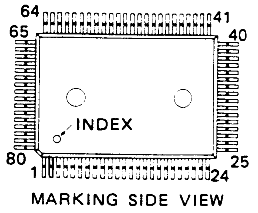
PST572H


Output
Ground
Vcc

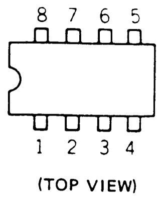
SBX1617-51


1 2 3
1 Vout
2 Vcc
3 GND

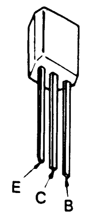
TMP87CC70F-6021


64
41
65
40
INDEX
80
1
24
25
MARKING SIDE VIEW

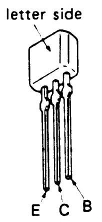
X24C01S


8 7 6 5
1 2 3 4
(TOP VIEW)

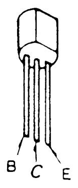
DTA114ES
DTC114ES
2S2603-EF
2SC2669-0Y
2SC3113-AB



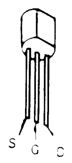
2SA1175-HFE
2SC2785-HFE


letter side
E C B

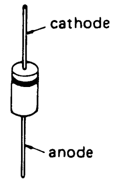
2SC3330-T



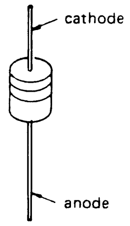
2SK246-GR3



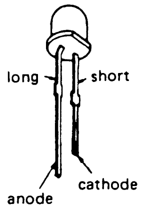
UZ-4.3BSA
1N4148M


cathode
anode

1SS120


cathode
anode

SEL2210S-D


long
short
anode
cathode

TUNER

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA . . : μA. .   uPA. . : μPA. .
  uPB. . : μPB. .   uPC. . : μPC. .   uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

· G : Germany model
· IT : Italian model

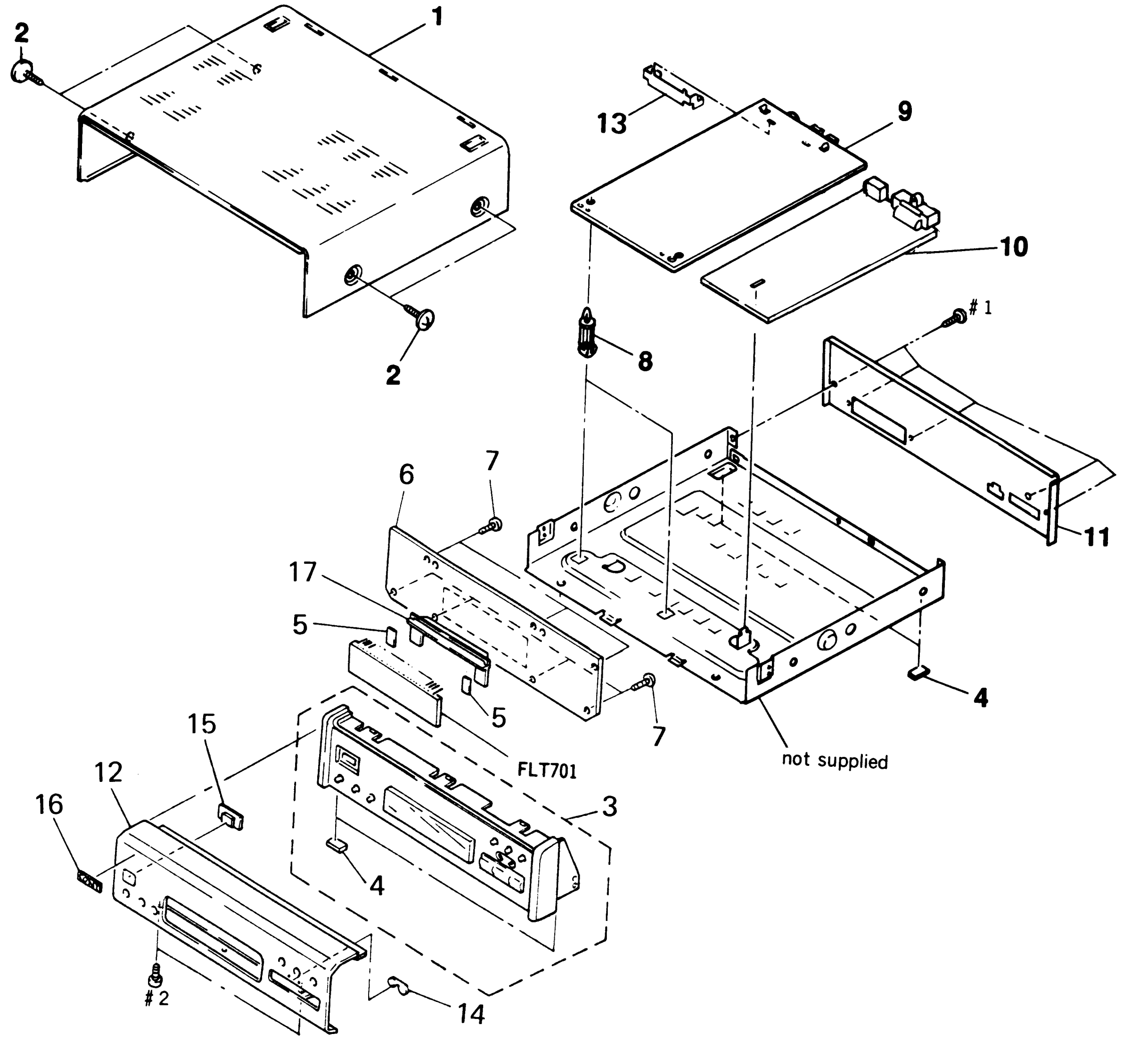
Ref. No.	Part No.	Description	Remark
	A-4303-367-A	TUNER BOARD, COMPLETE (TCB007-3HJFH)	(AEP, UK)
	A-4303-368-A	TUNER BOARD, COMPLETE (TCB007-3IJFH)	(G, IT)
		************************************	
*	4-924-988-11	PLATE (ST), GROUND	
		< CAPACITOR >	
C1	1-162-294-11	CERAMIC CHIP 0.001uF 20% 25V	
C2	1-124-119-00	ELECT 330uF 20% 16V	
C3	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C4	1-162-294-31	CERAMIC CHIP 0.001uF 20% 25V	
C5	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C6	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C7	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	(G, IT)
C8	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	(G, IT)
C9	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C11	1-101-005-00	CERAMIC 0.022uF 50V	(G, IT)
C21	1-101-006-00	CERAMIC 0.047uF 50V	
C22	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C23	1-124-477-11	ELECT 47uF 20% 25V	
C24	1-123-382-00	ELECT 3.3uF 20% 100V	
C25	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C26	1-163-019-00	CERAMIC CHIP 0.0068uF 20% 12V	
C27	1-162-516-11	CERAMIC CHIP 100pF 10% 50V	(AEP, UK)
C27	1-163-007-11	CERAMIC CHIP 680pF 20% 50V	(G, IT)
C28	1-124-903-11	ELECT 1.0uF 20% 50V	
C29	1-162-516-11	CERAMIC CHIP 100pF 10% 50V	(G, IT)
C30	1-124-903-11	ELECT 1.0uF 20% 50V	
C31	1-124-902-00	ELECT 0.47uF 20% 50V	
C32	1-124-463-00	ELECT 0.1uF 20% 50V	
C33	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C34	1-123-382-00	ELECT 3.3uF 20% 100V	
C35	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C36	1-123-382-00	ELECT 3.3uF 20% 100V	
C37	1-124-907-11	ELECT 10uF 20% 50V	
C39	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C40	1-124-463-00	ELECT 0.1uF 20% 50V	
C41	1-124-907-11	ELECT 10uF 20% 50V	
C42	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C43	1-126-176-11	ELECT 220uF 20% 10V	
C44	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C45	1-123-382-00	ELECT 3.3uF 20% 100V	
C46	1-161-375-00	CERAMIC CHIP 0.0022uF 20% 25V	
C47	1-163-170-00	CERAMIC CHIP 0.0047uF 20% 25V	(G, IT)
C48	1-123-382-00	ELECT 3.3uF 20% 100V	
C49	1-161-375-00	CERAMIC CHIP 0.0022uF 20% 25V	
C50	1-163-170-00	CERAMIC CHIP 0.0047uF 20% 25V	(G, IT)
C51	1-124-477-11	ELECT 47uF 20% 25V	
C53	1-163-105-00	CERAMIC CHIP 33pF 5% 50V	
C54	1-101-005-00	CERAMIC 0.022uF 50V	(G, IT)
C61	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C62	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C63	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C64	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C65	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C66	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C67	1-102-120-00	CERAMIC 0.0018uF 10% 50V	
C68	1-163-111-11	CERAMIC CHIP 0.0015uF 20% 25V	
C69	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C70	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C71	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C72	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C73	1-163-063-00	CERAMIC MELF 0.022uF 25V	
C81	1-102-961-00	CERAMIC 27pF 5% 50V	
C82	1-102-961-00	CERAMIC 27pF 5% 50V	
C83	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C84	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C85	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C86	1-124-477-11	ELECT 47uF 20% 25V	
C87	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C88	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C89	1-124-443-00	ELECT 100uF 20% 10V	
C101	1-124-925-11	ELECT 2.2uF 20% 100V	
C102	1-124-463-00	ELECT 0.1uF 20% 50V	
C103	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C104	1-163-059-00	CERAMIC MELF 0.01uF 20% 16V	
C105	1-124-477-11	ELECT 47uF 20% 25V	
C106	1-136-173-00	FILM 0.47uF 5% 50V	

SECTION 5
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

· G : Germany model
· IT : Italian model



Ref. No.	Part No.	Description	Remark
1	4-932-844-11	CASE	
2	3-363-099-01	SCREW (CASE +3X8 TP2)	
3	X-4942-536-1	PANEL (H) ASSY, FRONT	
4	4-930-336-21	FOOT (FELT)	
* 5	4-932-810-11	CUSHION (FL)	
* 6	A-4345-973-A	DISPLAY BOARD, COMPLETE (AEP, UK, G)	
* 6	A-4345-977-A	DISPLAY BOARD, COMPLETE (IT)	
7	4-951-620-01	SCREW (2.6X8), +BVTP	
* 8	4-914-008-01	HOLDER, PCB	
* 9	A-4303-367-A	TUNER BOARD, COMPLETE (TCB007-3HJFH) (AEP, UK)	
* 9	A-4303-368-A	TUNER BOARD, COMPLETE (TCB007-3HJFH) (G, IT)	

Ref. No.	Part No.	Description	Remark
* 10	1-643-552-11	CONNECTOR BOARD	
* 11	4-948-730-01	PANEL (EXP), BACK (AEP, UK)	
* 11	4-948-730-11	PANEL (EXP), BACK (IT)	
* 11	4-948-730-21	PANEL (EXP), BACK (G)	
12	4-950-911-11	PANEL (ST), FRONT	
* 13	4-924-988-11	PLATE (ST), GROUND	
14	4-944-427-01	INDICATOR	
15	4-944-425-01	FILTER	
16	4-942-636-01	EMBLEM (NO. 3.5), SONY	
* 17	4-944-444-01	HOLDER (FL TUBE)	
FLT701	1-519-709-11	INDICATOR TUBE, FLUORESCENT	

TUNER DISPLAY CONNECTOR

Ref. No.	Part No.	Description	Remark
R31	1-249-331-11	CARBON MELF 470 5% 1/8W	
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R34	1-249-437-11	CARBON (SMALL) 47K 5% 1/4W	
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W	
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W	
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W	
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W	
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W	
R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W	
⚠R47	1-249-409-11	CARBON (SMALL) 220 5% 1/4W	F
R48	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R49	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R61	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R62	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R64	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R65	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R66	1-215-493-00	CARBON MELF 1M 5% 1/5W	
R67	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R68	1-249-352-11	CARBON MELF 27K 5% 1/8W	
R69	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R70	1-249-331-11	CARBON MELF 470 5% 1/8W	
R71	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R72	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R73	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R74	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R75	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R81	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R82	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R83	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R84	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R85	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R86	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R87	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R89	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R90	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R91	1-249-335-11	CARBON MELF 1K 5% 1/8W	
⚠R92	1-249-401-11	CARBON (SMALL) 47 5% 1/4W	F
R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W	
R102	1-249-332-11	CARBON MELF 560 5% 1/8W	
R103	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R104	1-249-328-11	CARBON MELF 270 5% 1/8W	
R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R108	1-249-323-11	CARBON MELF 100 5% 1/8W	
R109	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
⚠R110	1-249-405-11	CARBON (SMALL) 100 5% 1/4W	F
R111	1-249-341-11	CARBON MELF 3.3K 5% 1/8W	
R112	1-249-332-11	CARBON MELF 560 5% 1/8W	
R113	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R114	1-249-328-11	CARBON MELF 270 5% 1/8W	
R115	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R116	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R117	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R118	1-249-323-11	CARBON MELF 100 5% 1/8W	
		< VARIABLE RESISTOR >	
RV21	1-238-598-11	RES, ADJ, CARBON 2.2K (AEP,UK)	
RV21	1-238-600-11	RES, ADJ, CARBON 10K (G,IT)	
RV22	1-238-601-11	RES, ADJ, CARBON 22K	
RV24	1-238-601-11	RES, ADJ, CARBON 22K (AEP,UK)	
RV24	1-238-602-11	RES, ADJ, CARBON 47K (G,IT)	
		< TRANSFORMER >	
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
T23	1-236-465-11	ENCAPSULATED COMPONENT (G,IT)	
		< TERMINAL >	
* TM1	1-537-138-31	TERMINAL BOARD (ANTENNA)	
		< CONNECTOR PIN >	
* TP1	1-560-060-00	PIN, CONNECTOR 2P	
		< CRYSTAL VIBRATOR >	
XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)	

****

*	A-4345-973-A	DISPLAY BOARD COMPLETE (AEP,UK,G)	
*	A-4345-977-A	DISPLAY BOARD COMPLETE (IT)	
		**********************	
*	1-643-552-11	CONNECTOR BOARD	
		***************	
*	4-932-810-11	CUSHION (FL)	
*	4-944-444-01	HOLDER (FL TUBE)	
		< CAPACITOR >	
C601	1-124-471-00	ELECT 1000uF 20% 6.3V	
C610	1-124-907-11	ELECT 10uF 20% 50V	
C701	1-126-177-11	ELECT 100uF 20% 10V	
C702	1-164-159-11	CERAMIC 0.1uF 50V	
C704	1-124-463-00	ELECT 0.1uF 20% 50V	

The components identified by
mark ⚠ or dotted line with mark
⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
C107	1-124-463-00	ELECT 0.1uF 20% 50V	
C108	1-163-063-00	CERAMIC MELF 0.022uF 25V	(G, IT)
C109	1-162-211-31	CERAMIC 33pF 5% 50V	
C121	1-161-379-00	CERAMIC 0.01uF 30% 16V	(G, IT)
		< FILTER >	
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	
CF3	1-567-389-11	FILTER, CERAMIC	(G, IT)
		< OSCILLATOR >	
CF21	1-577-075-11	OSCILLATOR, CERAMIC (19KHz)	
		< IF TRANSFORMER >	
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	
		< CONECTOR >	
* CNJ1	1-564-342-11	SOCKET, CONNECTOR 8P	
* CNJ2	1-564-339-00	PIN, CONNECTOR 5P	
* CNJ3	1-564-341-11	PIN, CONNECTOR 7P	
* CNJ4	1-564-337-00	PIN, CONNECTOR 3P	
		< DIODE >	
D61	8-719-912-20	DIODE 1SS120	
		< FM FRONT END >	
FE1	1-463-857-11	FRONT END, FM	(G, IT)
FE1	1-463-862-21	FRONT END, FM	(AEP, UK)
		< ENCAPSULATED COMPONENT >	
FE61	1-236-462-11	ENCAPSULATED COMPONENT (MW RF)	
FE62	1-236-463-11	ENCAPSULATED COMPONENT (LW RF)	
		< IC >	
IC21	8-759-821-45	IC LA1851N	
IC81	8-759-820-91	IC LC7218	
		< INDUCTOR >	
L1	1-410-645-31	MICRO INDUCTOR 100uH	
L2	1-410-645-31	MICRO INDUCTOR 100uH	(G, IT)
L21	1-407-500-00	MICRO INDUCTOR 4.7mH	
L61	1-410-525-11	MICRO INDUCTOR 220uH	
		< LOW PASS FILTER >	
LPF21	1-235-164-00	FILTER, LOW PASS	
LPF22	1-235-164-00	FILTER, LOW PASS	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-230-99	TRANSISTOR 2SC2669-0Y	
Q2	8-729-230-99	TRANSISTOR 2SC2669-0Y	
Q3	8-729-230-99	TRANSISTOR 2SC2669-0Y	(G, IT)
Q4	8-729-230-99	TRANSISTOR 2SC2669-0Y	(G, IT)
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q23	8-729-900-61	TRANSISTOR DTA114ES	
Q24	8-729-900-80	TRANSISTOR DTC114ES	
Q26	8-729-900-80	TRANSISTOR DTC114ES	
Q61	8-729-900-80	TRANSISTOR DTC114ES	
Q62	8-729-900-80	TRANSISTOR DTC114ES	
Q63	8-729-900-80	TRANSISTOR DTC114ES	
Q64	8-729-820-24	TRANSISTOR 2SC3330-T	
Q65	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q66	8-729-900-80	TRANSISTOR DTC114ES	
Q81	8-729-900-61	TRANSISTOR DTA114ES	
Q82	8-729-900-80	TRANSISTOR DTC114ES	
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB	
Q85	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q86	8-729-230-93	TRANSISTOR 2SC3113-AB	
		< RESISTOR >	
⚠R1	1-249-397-11	CARBON (SMALL) 22 5% 1/4W F	(G, IT)
⚠R1	1-249-401-11	CARBON (SMALL) 47 5% 1/4W F	(AEP, UK)
R3	1-249-329-11	CARBON MELF 330 5% 1/8W	
R4	1-249-329-11	CARBON MELF 330 5% 1/8W	
R5	1-249-329-11	CARBON MELF 330 5% 1/8W	
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W	
R7	1-249-329-11	CARBON MELF 330 5% 1/8W	
R8	1-249-332-11	CARBON MELF 560 5% 1/8W	
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W	
R10	1-249-329-11	CARBON MELF 330 5% 1/8W	(G, IT)
R11	1-249-350-11	CARBON MELF 18K 5% 1/8W	(G, IT)
R12	1-249-329-11	CARBON MELF 330 5% 1/8W	(G, IT)
R13	1-249-334-11	CARBON MELF 820 5% 1/8W	(G, IT)
R14	1-249-352-11	CARBON MELF 27K 5% 1/8W	(G, IT)
R15	1-249-374-11	CARBON MELF 10K 5% 1/8W	(G, IT)
R16	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	(G, IT)
⚠R21	1-249-404-00	CARBON (SMALL) 82 5% 1/4W F	
R22	1-249-433-11	CARBON (SMALL) 22K 5% 1/4W	
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W	
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W	
R27	1-249-432-11	CARBON (SMALL) 18K 5% 1/4W	
R28	1-249-423-11	CARBON (SMALL) 3.3K 5% 1/4W	
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

TUNER DISPLAY CONNECTOR

Ref. No.	Part No.	Description	Remark
R31	1-249-331-11	CARBON MELF 470 5% 1/8W	
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R34	1-249-437-11	CARBON (SMALL) 47K 5% 1/4W	
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W	
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W	
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W	
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W	
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W	
R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W	
⚠R47	1-249-409-11	CARBON (SMALL) 220 5% 1/4W	F
R48	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R49	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R61	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R62	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R64	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R65	1-249-355-11	CARBON MELF 47K 5% 1/8W	
R66	1-215-493-00	CARBON MELF 1M 5% 1/5W	
R67	1-249-359-11	CARBON MELF 100K 5% 1/8W	
R68	1-249-352-11	CARBON MELF 27K 5% 1/8W	
R69	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R70	1-249-331-11	CARBON MELF 470 5% 1/8W	
R71	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R72	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R73	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R74	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R75	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R81	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R82	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R83	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R84	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R85	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R86	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R87	1-249-347-11	CARBON MELF 10K 5% 1/8W	
R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R89	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R90	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R91	1-249-335-11	CARBON MELF 1K 5% 1/8W	
⚠R92	1-249-401-11	CARBON (SMALL) 47 5% 1/4W	F
R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W	
R102	1-249-332-11	CARBON MELF 560 5% 1/8W	
R103	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R104	1-249-328-11	CARBON MELF 270 5% 1/8W	
R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R108	1-249-323-11	CARBON MELF 100 5% 1/8W	
R109	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
⚠R110	1-249-405-11	CARBON (SMALL) 100 5% 1/4W	F
R111	1-249-341-11	CARBON MELF 3.3K 5% 1/8W	
R112	1-249-332-11	CARBON MELF 560 5% 1/8W	
R113	1-249-335-11	CARBON MELF 1K 5% 1/8W	
R114	1-249-328-11	CARBON MELF 270 5% 1/8W	
R115	1-249-351-11	CARBON MELF 22K 5% 1/8W	
R116	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	
R117	1-249-343-11	CARBON MELF 4.7K 5% 1/8W	
R118	1-249-323-11	CARBON MELF 100 5% 1/8W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV21	1-238-598-11	RES, ADJ, CARBON 2.2K (AEP, UK)	
RV21	1-238-600-11	RES, ADJ, CARBON 10K (G, IT)	
RV22	1-238-601-11	RES, ADJ, CARBON 22K	
RV24	1-238-601-11	RES, ADJ, CARBON 22K (AEP, UK)	
RV24	1-238-602-11	RES, ADJ, CARBON 47K (G, IT)	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
T23	1-236-465-11	ENCAPSULATED COMPONENT (G, IT)	

< TERMINAL >

Ref. No.	Part No.	Description	Remark
* TM1	1-537-138-31	TERMINAL BOARD (ANTENNA)	

< CONNECTOR PIN >

Ref. No.	Part No.	Description	Remark
* TP1	1-560-060-00	PIN, CONNECTOR 2P	

< CRYSTAL VIBRATOR >

Ref. No.	Part No.	Description	Remark
XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)	

****

Ref. No.	Part No.	Description	Remark
*	A-4345-973-A	DISPLAY BOARD COMPLETE (AEP, UK, G)	
*	A-4345-977-A	DISPLAY BOARD COMPLETE (IT)	

****

Ref. No.	Part No.	Description	Remark
*	1-643-552-11	CONNECTOR BOARD	

****

Ref. No.	Part No.	Description	Remark
*	4-932-810-11	CUSHION (FL)	
*	4-944-444-01	HOLDER (FL TUBE)	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C601	1-124-471-00	ELECT 1000uF 20% 6.3V	
C610	1-124-907-11	ELECT 10uF 20% 50V	
C701	1-126-177-11	ELECT 100uF 20% 10V	
C702	1-164-159-11	CERAMIC 0.1uF 50V	
C704	1-124-463-00	ELECT 0.1uF 20% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C705	1-161-494-00	CERAMIC	0.022uF		25V
C706	1-162-196-31	CERAMIC	5.6PF	10%	50V
C707	1-162-196-31	CERAMIC	5.6PF	10%	50V
C710	1-164-159-11	CERAMIC	0.1uF		50V
C711	1-126-157-11	ELECT	10uF	20%	16V
C712	1-126-177-11	ELECT	100uF	20%	10V
C713	1-136-173-00	FILM	0.47uF	5%	50V
C714	1-136-173-00	FILM	0.47uF	5%	50V
C715	1-136-173-00	FILM	0.47uF	5%	50V
C716	1-161-494-00	CERAMIC	0.022uF		25V
C719	1-162-306-11	CERAMIC	0.01uF	20%	16V
C720	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< VIBRATOR, CERAMIC >			
CF701	1-579-125-11	VIBRATOR, CERAMIC (8MHz)			
		< CONNECTOR >			
* CNJ601	1-566-859-11	SOCKET, CONNECTOR 15P (SYSTEM CONTROL 1)			
* CNJ602	1-564-341-11	PIN, CONNECTOR 7P			
* CNJ603	1-564-337-00	PIN, CONNECTOR 3P			
* CNJ604	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)			
* CNJ701	1-564-342-11	PIN, CONNECTOR 8P			
* CNJ702	1-564-339-00	PIN, CONNECTOR 5P			
		< DIODE >			
D701	8-719-987-63	DIODE	1N4148M		
D702	8-719-987-63	DIODE	1N4148M		
D706	8-719-987-63	DIODE	1N4148M (IT)		
D707	8-719-987-63	DIODE	1N4148M		
D710	8-719-301-39	LED	SEL2210S (PRESET)		
D711	8-719-301-39	LED	SEL2210S (TUNING)		
D712	8-719-987-63	DIODE	1N4148M		
D714	8-719-987-63	DIODE	1N4148M		
D715	8-719-010-28	DIODE	UZ-4.3BSA		
D716	8-719-987-63	DIODE	1N4148M		
D717	8-719-987-63	DIODE	1N4148M		
D718	8-719-987-63	DIODE	1N4148M		
		< FLUORESCENT INDICATOR >			
FLT701	1-519-709-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-059-85	IC	TMP87CC70F-6021		
IC702	8-759-504-12	IC	X24C01S		
IC703	8-741-100-61	IC	SBX1617-51		
IC704	8-759-515-58	IC	PST572H		

Ref. No.	Part No.	Description			Remark
		< COIL >			
L602	1-424-090-11	COIL, LINE FILTER (G, IT)			
L603	1-424-090-11	COIL, LINE FILTER (G, IT)			
L701	1-410-521-11	INDUCTOR	100uH		
L702	1-410-521-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q701	8-729-900-80	TRANSISTOR	DTC114ES		
Q702	8-729-900-80	TRANSISTOR	DTC114ES		
Q705	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q706	8-729-900-80	TRANSISTOR	DTC114ES		
Q707	8-729-620-05	TRANSISTOR	2SC2603-EF		
		< RESISTOR >			
R601	1-249-393-11	CARBON	10	5%	1/4W
R701	1-249-417-11	CARBON	1K	5%	1/4W
R702	1-249-417-11	CARBON	1K	5%	1/4W
R703	1-249-417-11	CARBON	1K	5%	1/4W
R704	1-249-417-11	CARBON	1K	5%	1/4W
R705	1-249-417-11	CARBON	1K	5%	1/4W
R706	1-249-423-11	CARBON	3.3K	5%	1/4W
R707	1-249-423-11	CARBON	3.3K	5%	1/4W
R708	1-249-421-11	CARBON	2.2K	5%	1/4W
R709	1-249-423-11	CARBON	3.3K	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-411-11	CARBON	330	5%	1/4W
R714	1-249-429-11	CARBON	10K	5%	1/4W
R715	1-249-417-11	CARBON	1K	5%	1/4W
R716	1-249-429-11	CARBON	10K	5%	1/4W
R717	1-249-425-11	CARBON	4.7K	5%	1/4W
R718	1-249-429-11	CARBON	10K	5%	1/4W
R719	1-249-429-11	CARBON	10K	5%	1/4W
R720	1-249-429-11	CARBON	10K	5%	1/4W
R721	1-249-429-11	CARBON	10K	5%	1/4W
R722	1-249-429-11	CARBON	10K	5%	1/4W
R723	1-249-423-11	CARBON	3.3K	5%	1/4W
R724	1-249-429-11	CARBON	10K	5%	1/4W
R725	1-249-417-11	CARBON	1K	5%	1/4W
R726	1-249-417-11	CARBON	1K	5%	1/4W
R727	1-249-417-11	CARBON	1K	5%	1/4W
R728	1-249-417-11	CARBON	1K	5%	1/4W
R729	1-249-417-11	CARBON	1K	5%	1/4W
R730	1-249-417-11	CARBON	1K	5%	1/4W
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-249-429-11	CARBON	10K	5%	1/4W
R733	1-249-429-11	CARBON	10K	5%	1/4W
R734	1-249-417-11	CARBON	1K	5%	1/4W
R736	1-249-429-11	CARBON	10K	5%	1/4W

DISPLAY CONNECTOR

Ref.No.	Part No.	Description	Remark
R737	1-249-409-11	CARBON 220 5%	1/4W
		< SWITCH >	
S701	1-554-303-21	SWITCH, TACTILE (WAKE UP TIMER 1)	
S702	1-554-303-21	SWITCH, TACTILE (WAKE UP TIMER 2)	
S703	1-554-303-21	SWITCH, TACTILE (REC TIMER)	
S705	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)	
S706	1-554-303-21	SWITCH, TACTILE (MODE)	
S707	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
S708	1-554-303-21	SWITCH, TACTILE (BAND)	
S709	1-554-303-21	SWITCH, TACTILE (-)	
S710	1-554-303-21	SWITCH, TACTILE (+)	
		< VIBRATOR >	
XT701	1-527-997-21	VIBRATOR, CRYSTAL (32KHz)	

****

HARDWARE LIST

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#2	7-682-547-09	SCREW +BVTT 3X6 (S)

Sony Corporation
Audio Group

English
92E0459-1
Printed in Japan

© 1992. 5

Published by Customer Relations and Service Group